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VOLUME XXXIX
1970

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Volume 39 · Number 1 · January 1970

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Therapy for Hepatorenal Syndrome
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Metastatic Mucosal Tumors of Small Intestine
WILLARD A. BURNS, M.D., AND MARY J. MATTHEWS, M.D.

Pulmonary Function Studies in Systemic Sclerosis
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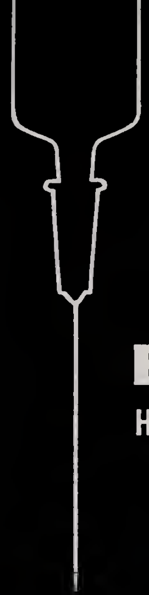

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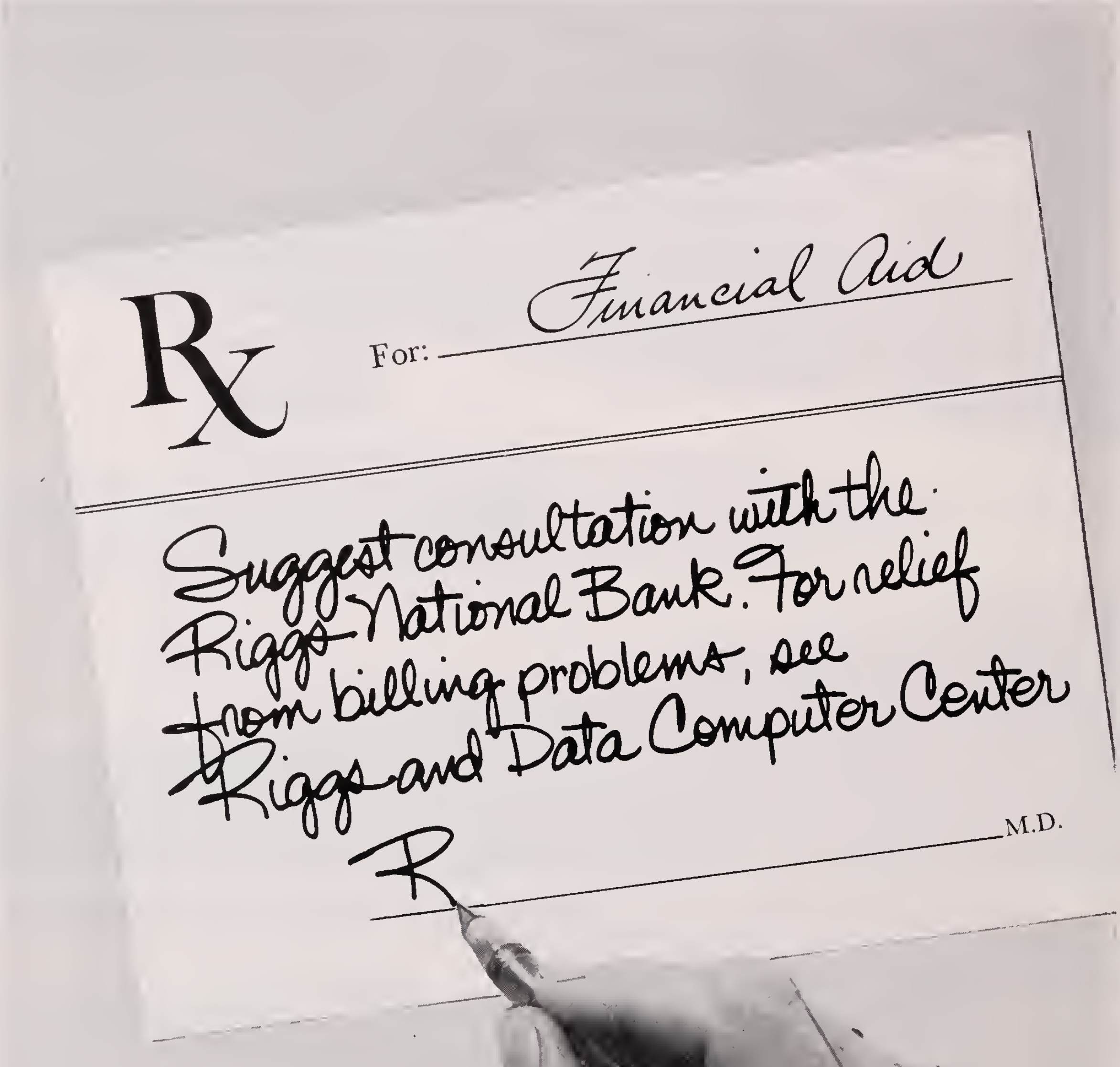

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Yearly Subscription, $8.00
Single Number, 75¢

Second-class postage paid at Baltimore, Md.
Published monthly at
Mount Royal and Guilford Avenues,
Baltimore, Maryland 21202

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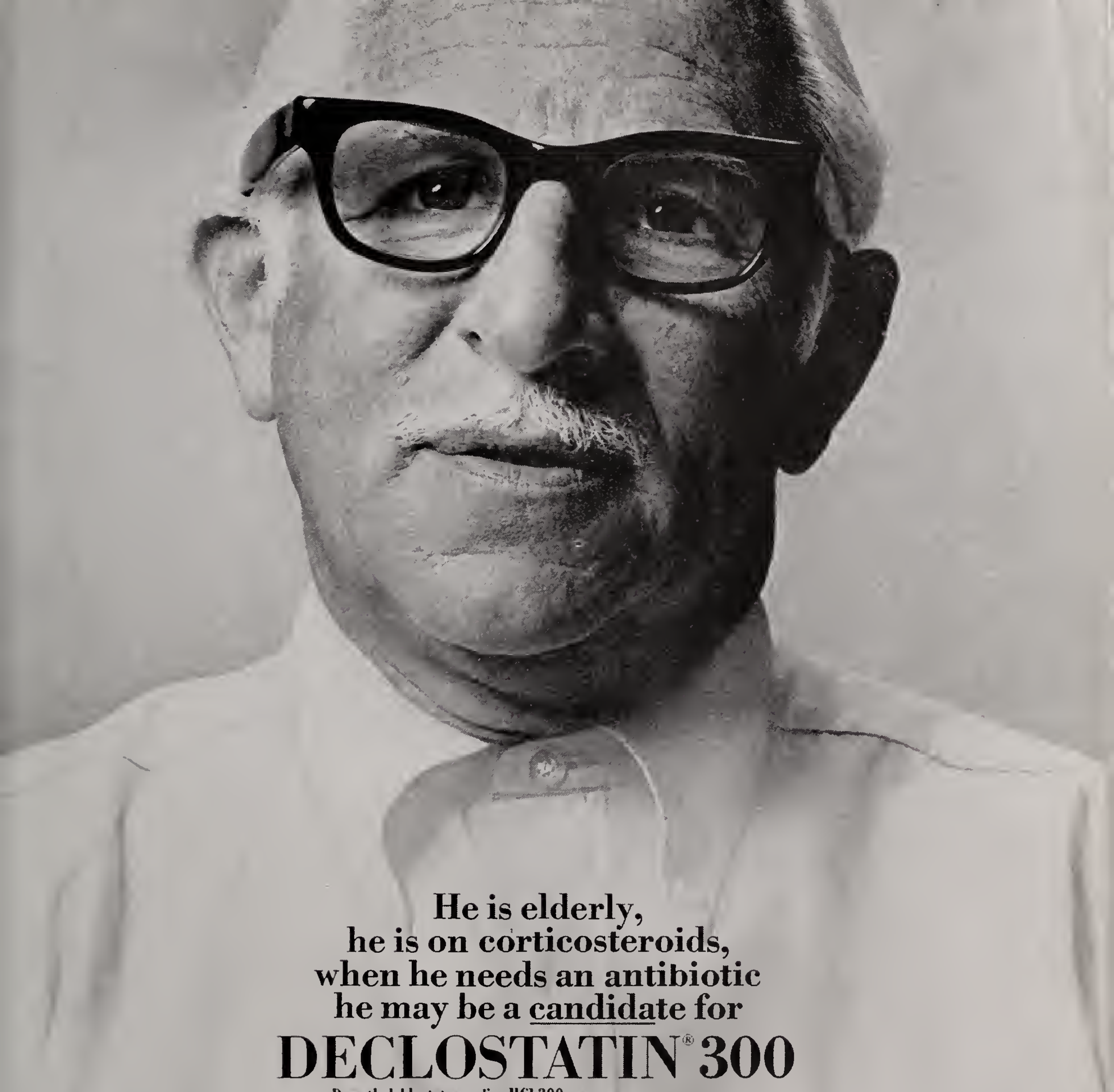

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References: (1) Salerno, L. J.; Ortiz, G., and Turkel, V.: Vaginitis: A Diagnostic and Therapeutic Approach, Scientific Exhibit, presented at the 115th Annual A.M.A. Convention, Chicago, Illinois, June 1966. (2) Nugent, F. B., and Myers, J. E.: Pennsylvania Med. 69:44, 1966.

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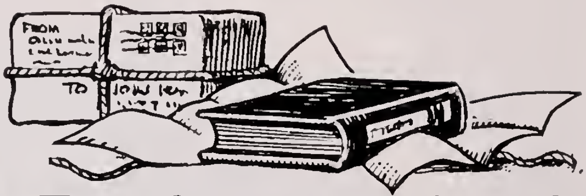

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Fundamentals of Inhalation Therapy. Donald F. Egan, M.D. Price, $11.00. Pp. 474, with 148 illustrations. St. Louis: Mosby, 1969.

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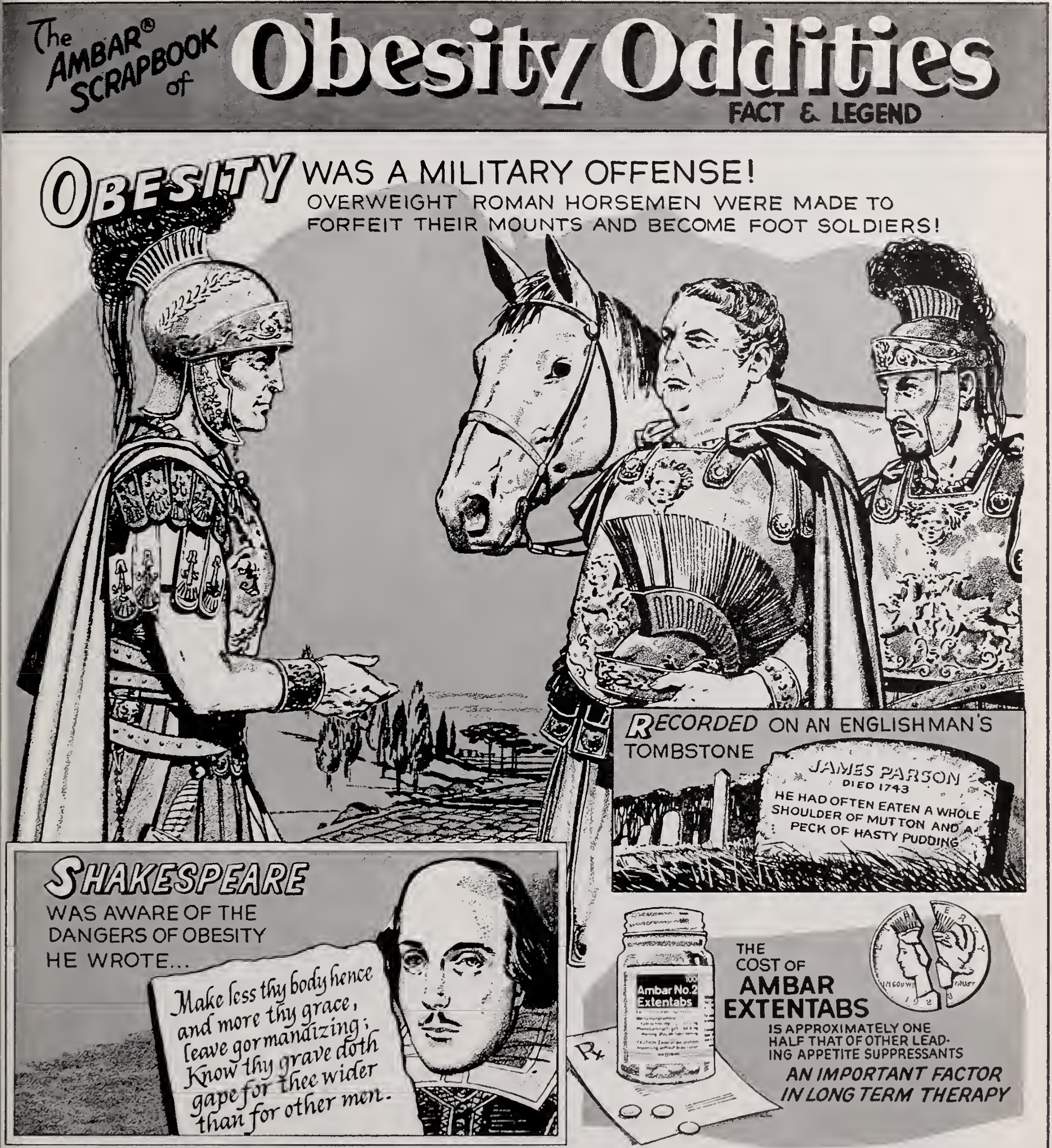
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of the District of Columbia

January 1970

VOLUME XXXIX • NUMBER 1

Veterans Administration Hospital Number

THIS IS THE THIRD of a sixth series of special numbers of the MEDICAL ANNALS, the scientific material for which is supplied by medical institutions and scientific organizations in the Washington Metropolitan Area. For the VETERANS ADMINISTRATION HOSPITAL NUMBER the Editorial Board is indebted to Dr. James A. Halsted, Consulting Editor of the MEDICAL ANNALS, who secured the papers which appear in this issue.

Renal Vasodilator Therapy in the Hepatorenal Syndrome*

JAY N. COHN, M.D.,† FELIX E. TRISTANI, M.D.,‡ AND IBRAHIM M. KHATRI, M.B.§

THE RENAL FAILURE which occurs frequently in the end stages of hepatic decompensation has been the subject of considerable investigative effort.[1, 2, 3] Despite numerous attempts at clinical and physiologic classification, the cause of oliguria in this clinical setting remains conjectural and the therapy uniformly disappointing.

Although the term "hepatorenal syndrome" was originally used to refer to patients who became oliguric after biliary surgery,[4] this diagnostic term has been broadened by many clinicians to include all those patients with hepatic decompensation who develop progressive deterioration of renal function in the absence of other known causes of renal disease. The phrase "hepatorenal syndrome" has been rejected by some authors because of its nonrigorous definition and because it implies a relationship between the liver and kidney which has not yet been established.[5]

Since histologic examinations of the kidneys of patients with hepatic failure who have died following a period of oliguria have consistently failed to demonstrate a significant specific lesion, it has become widely accepted that the renal functional impairment is due to hemodynamic alterations.[5, 6, 7] Indeed, cirrhosis of the liver is associated with profound alterations in systemic and regional blood flow.[8] Furthermore, kidneys from patients dying with azotemia and hepatic failure have been successfully used for homotransplantation.[9]

Although hemodynamic measurements performed in patients with oliguria and hepatic failure have revealed a wide range of values,[7] markedly reduced renal blood flow or severe hypotension has invariably been present. The purpose of the present report is to describe clinical and hemodynamic observations in 4 selected patients who exemplify the divergence of abnormalities which may occur in the hepatorenal syndrome. Each of the patients was treated with drugs or maneuvers specifically selected to correct hypotension or renal hypoperfusion. Since renal function improved dramatically in each patient, although all succumbed to other complications of their disease, these data may be used as further support of the concept of a circulatory basis of the oliguria in this syndrome.

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* This study was supported in part by Grant HE-09785 from the National Heart Institute, National Institutes of Health, Public Health Service, U. S. Department of Health, Education, and Welfare.

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Methods

Catheterization of the renal artery and renal vein was accomplished under fluoroscopic guidance with precurved radiopaque polyethylene catheters introduced percutaneously in the femoral vessels by the Seldinger technique. Renal blood flow (RBF) was measured by an indicator-dilution technique with injection of indocyanine green into the renal artery while renal venous blood was withdrawn through a Gilford cuvette densitometer.[10] Cardiac output also was measured by the indicator-dilution method with dye injection into the inferior vena cava or right atrium and sampling from the aorta or renal artery.

Inulin and para-aminohippurate (PAH) determinations were performed by standard methods.[11, 12] Sodium and potassium concentrations were measured with an Instrumentation Laboratories flame photometer.

Report of Cases

Case 1. R. H., a 51-year-old male office worker, was transferred from another hospital for further management of hepatic failure. He had had a colectomy and ileostomy for ulcerative colitis 11 years prior to admission and was known to have an asymptomatic, small nonfunctioning left kidney with compensatory hypertrophy of the right kidney. He had consumed approximately one-fifth gallon of alcohol daily for 30 years, and a liver biopsy 3 years before had revealed changes compatible with steatonecrosis. Admission to the other hospital was precipitated by profuse bleeding from a skin ulcer at the ileostomy site, requiring local suturing and transfusion with 6 units of whole blood. Oliguria was noted for several days in the other hospital, and treatment with albumin infusions and diuretics was reported to have restored adequate urinary volume.

On admission the patient was drowsy and icteric. The blood pressure was 90/60 mm. Hg and the pulse 140 and regular. The temperature was normal. Multiple spider angiomata were present on the thorax and face. The neck veins were flat. An indwelling bladder catheter was in place. The urine gave a 2+ test for protein; the specific gravity was 1.015, and the sediment contained numerous white blood cells and red blood cells. Urine cultures were negative. The hematocrit was 33 per cent and the white blood cell count 21,000 with 90 per cent neutrophils. The blood urea nitrogen (BUN) was 35 mg. and the bilirubin 4.1 mg. per 100 ml.

During the first 5 days in the hospital the urine output was low and the serum sodium fell progressively while the serum potassium rose. The patient was treated with intravenous fluids and sodium cephalothin, 6 Gm. daily, because of the suspicion of infection, although blood and urine cultures were repeatedly negative. By the sixth hospital day the BUN was 58 mg. per 100 ml., creatinine 4.0 mg. per 100 ml., serum sodium 124, and serum potassium 6.9 mEq. per liter. Rapid intravenous infusion of sodium bicarbonate and saline during monitoring of central venous pressure resulted in a return toward normal of the serum electrolytes and a rise in blood pressure to 100/60 mm. Hg. The sensorium improved and urine output increased to between 500 and 700 ml. per day. The BUN fell to 31 mg. and the creatinine to 1.8 mg. per 100 ml.

Over the next 6 days the urine output gradually fell again to less than 20 ml. per hour despite maintenance of the central venous pressure at between 8 and 12 cm. H_2O with whole blood, dextran and crystalloid solutions. Urine sodium concentration was 7 mEq. per liter. Ascites gradually accumulated, and there were signs of increasing encephalopathy. Spironolactone was begun on the eleventh hospital day without a clinical response. Laboratory studies on the thirteenth day are shown in table 1.

TABLE 1: Laboratory Findings at Time of Hemodynamic Studies

Case	HCT	Bilirubin	BUN	Na	K	Cl	CO_2	Albumin/ Globulin
	per cent	*mg./ 100 ml.*	*mg./ 100 ml.*	*mEq./L*	*mEq./L*	*mEq./L*	*mm./L*	*Gm./100 ml.*
1	31	4.9	37	123	3.3	94	18	2.6/3.5
2	36	2.3	31	131	6.0	102	20	2.1/4.9
3	24	28	105	131	3.4	92	27	2.3/3.9
4	34	7.3	45	116	3.3	80	25	2.6/2.8

Hemodynamic studies were performed on the thirteenth day, with blood flow measured in the single functioning right kidney. Results of these studies are shown in table 2. Infusion of 60 mg. furosemide directly

TABLE 2: Hemodynamic Findings in Hepatorenal Syndrome

Case	Day	Arterial Pressure	Cardiac Output	Cardiac Index	Central Venous Pressure	Total Peripheral Resistance	Renal Blood Flow	Renal Fraction	PAH Extraction
		(mm. Hg)	*(L/min.)*	*(L/min./m²)*	*(mm. Hg)*	*dyne-sec.-cm.⁻⁵*	*ml./min./kidney*	*per cent*	*per cent*
1	13	116/56	12.24	7.34	8	434	225	1.8	—
	18	116/56	10.42	6.23	6	507	—	—	—
	25	96/36	10.70	6.40	7	321	Too low to measure		9.9
2	14	120/80	4.83	2.93	3	1,275	270	5.5	—
	71	128/56	6.90	4.17	3	821	318	4.6	54
3	15	80/42	6.19	3.75	10	595	448	7.2	33
4	28	64/38	6.05	3.56	7	496	128	2.1	—

into the renal artery produced only a slight diuresis. Intravenous infusion of PLV-2* (octapressin), however, resulted in a rise in arterial pressure and renal blood flow and a sharp increase in urine volume and sodium excretion (figure 1).

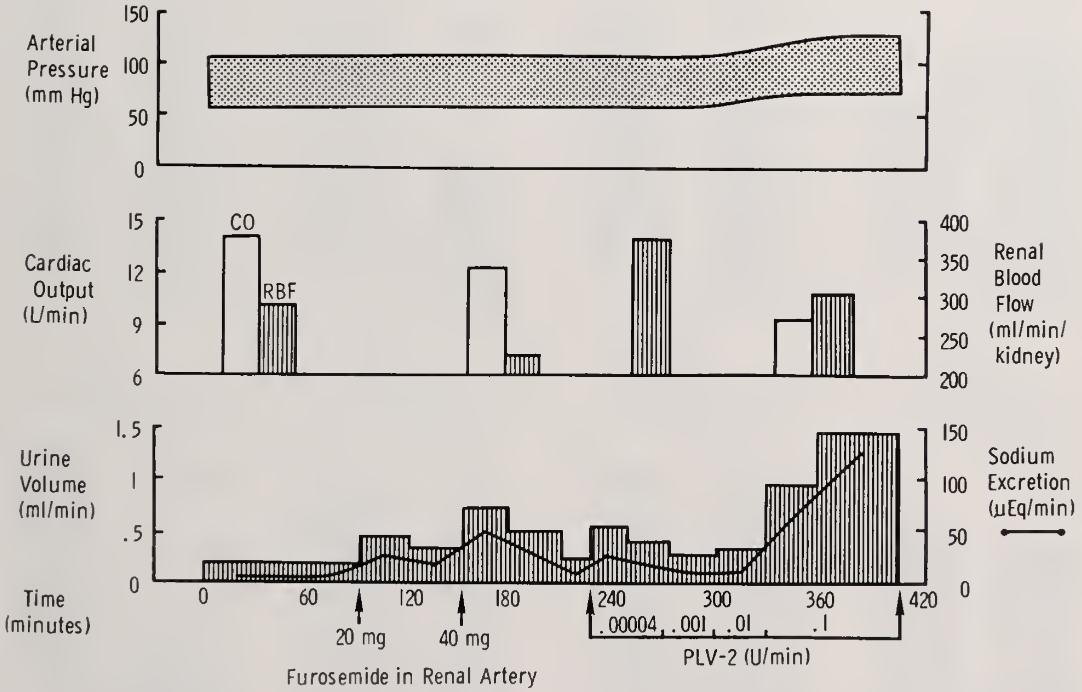

FIG. 1. Hemodynamic and renal functional responses to furosemide and to increasing doses of PLV-2 in patient 1. Renal blood flow (RBF) increased during infusion of small doses of PLV-2, but the diuresis was associated with a rise in blood pressure during higher infusion rates. Although cardiac output (CO) was lower during the pressor phase, RBF was still maintained at levels higher than during the control period.

For the next 48 hours the blood pressure was maintained at about 120/80 mm. Hg and urine output at between 30 and 50 ml. per hour with intermittent subcutaneous injections of 5 units PLV-2. When PLV-2 was withheld the urine output promptly fell. On the sixteenth day bilateral pulmonary infiltrations were noted along with an increase in central venous pressure and a reduction in urine output to 10 ml. per hour. Because of the possibility of heart failure, PLV-2 was discontinued and digoxin was administered. A catheter was again introduced retrograde into the right renal artery and an intrarenal infusion of acetylcholine at a rate of 123 μg. per min. was begun with a constant infusion pump. Urine output promptly increased to 40–50 ml. per hour, but after several hours of continuous infusion output again fell to less than 20 ml. per hour. A systemic infusion of norepinephrine raised the arterial pressure from 105/40 to 130/60 mm. Hg while the intrarenal acetylcholine infusion was maintained, but no further increase in urine output occurred. An infusion of isoproterenol also failed to stimulate urine flow. The drugs were, therefore, discontinued and the urine output fell to about 10 ml. per hour. Ventilatory obstruction as the result of copious, purulent secretions necessitated a tracheostomy and positive pressure ventilation with a Bird respirator.

On the eighteenth day the cardiac output was measured again and found to be only slightly lower than 5 days before (table 2). Over the ensuing 5 days the patient remained relatively stable with the blood pressure about 105/40 mm. Hg and the urine output between 10 and 15 ml. per hour. The BUN which had remained relatively stable over the previous week increased progressively to 84 mg. per 100 ml. Urine sodium concentration increased progressively from 9 to 32 mEq. per liter. The blood pressure began to fall on the twenty-fourth hospital day, and hemodynamic studies were repeated the next day, when the auscultatory blood pressure was 70/20 mm. Hg, the urine output less than 5 ml. per hour, and the urine sodium concentration 105 mEq. per liter.

In this preterminal state the cardiac output was little changed from previous studies (table 2), the fall in blood pressure being due primarily to a further reduction in total peripheral resistance. Left ventricular end-diastolic pressure was elevated and the cardiac output could not be increased either by infusion of low molecular weight dextran or isoproterenol. Renal dye curves were repeated, but the renal blood flow was apparently so low that the delay in dye transit through the kidney and incomplete mixing of dye made calculation of renal blood flow impossible. Renal PAH extraction ratio was only 9.9 per cent, reflecting diminished cortical perfusion or tubular function. The patient died the following day.

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* Kindly supplied by Sandoz Pharmaceuticals, Hanover, N. J.

Postmortem examination revealed Laennec's cirrhosis with steatonecrosis. There was bilateral acute and organizing bronchopneumonia and pulmonary congestion. The left kidney was markedly hypoplastic and the right kidney enlarged and bile-stained with no specific histologic lesions.

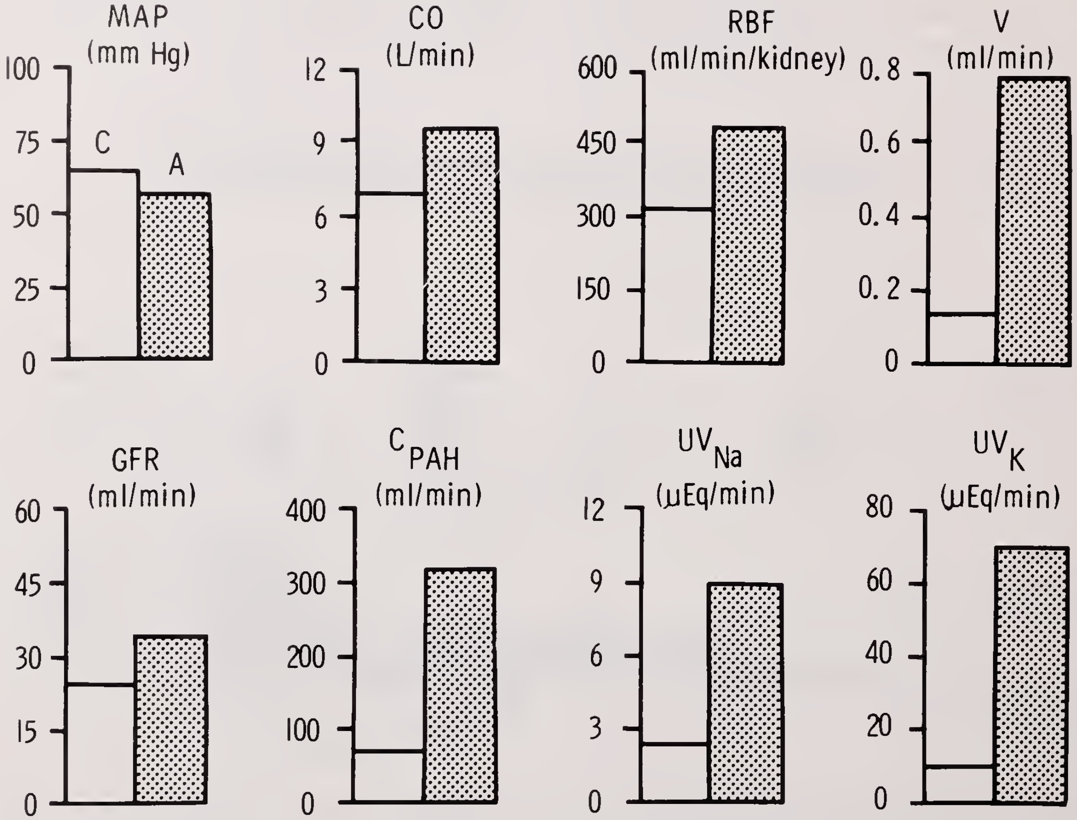

FIG. 2. Results of hemodynamic and renal studies in patient 2 during the control oliguric period (C) and during the diuresis induced by ascites reinfusion (A). Although arterial pressure (MAP) is not altered, CO and RBF are increased. The increase in urine flow (V) is associated with a slight rise in glomerular filtration rate (GFR) and a 4-fold increase in PAH clearance.

Case 2. W. B., a 55-year-old chronic alcoholic with biopsy-proved postnecrotic cirrhosis, was admitted because of progressive abdominal distention. The blood pressure was 140/90 mm. Hg, and pulse 108 and regular. He was slightly jaundiced and had large spider angiomata over the upper part of his body. There were massive ascites and marked peripheral edema.

Attempts at diuresis with spironolactone and hydrochlorothiazide were not successful, and the patient became confused and exhibited a flapping tremor. The urine output fell progressively to less than 500 ml. per day, and the BUN increased to 28 mg. per 100 ml.

On the fourteenth hospital day the ascitic fluid was infused intravenously by means of a Sigmamotor pump which drained the abdominal cavity through a plastic cannula and pumped the fluid to a bottle reservoir from which it drained through a blood filter into a catheter in the inferior vena cava. Hemodynamic studies performed prior to the procedure are shown in table 2. During infusion the cardiac output increased to 8.9 liters per minute and the renal blood rose to 463 ml. per minute per kidney. The urine output during the infusion ranged between 50 and 200 ml. per hour. The infusion was continued for 48 hours with continuous monitoring of central venous pressure. At the time it was discontinued the abdomen was nearly flat and the patient considerably more alert. On the following day the BUN had fallen to 14 mg. per 100 ml. A slight fever developed following the procedure, and ampicillin was administered.

Over the next 4 days the urine output fell to less than 350 ml. per day and the BUN rose again. On the twenty-first hospital day the patient was started on intermittent injections of PLV-2, which increased the blood pressure and resulted in a rise in urine output to between 600 and 1,150 ml. per day. However, persistent diarrhea accompanied the PLV-2 administration and the drug was discontinued on the twenty-fourth day. The urine output decreased but during the next month he maintained a daily output averaging about 500 ml. with a stable BUN of about 35 mg. per 100 ml. However, he then began showing signs of increasing encephalopathy and increasing ascites with a fall in urine oūtput to between 300 and 450 ml. per day.

On the seventy-first hospital day ascites reinfusion was again accomplished. Laboratory data at this time are shown in table 1. The hemodynamic findings are shown in table 2 and the response to ascites infusion in figure 2. When the reinfusion was discontinued the urine output fell sharply, and ascitic fluid leaked from the paracentesis site. Reinfusion was therefore reinstituted and continued intermittently over the next 4 days with maintenance of a urine output between 500 and 1,000 ml. per day. However, on the fourth day staphylococcal infection of the peritoneal cavity was noted. The procedure was terminated and treatment with Prostaphlin® begun. However, the urine output fell, the BUN rose to 80 mg. per 100 ml., and the patient died on the eighty-second hospital day.

Postmortem examination revealed cirrhosis of the liver, bilateral bronchopneumonia, and no specific renal lesions.

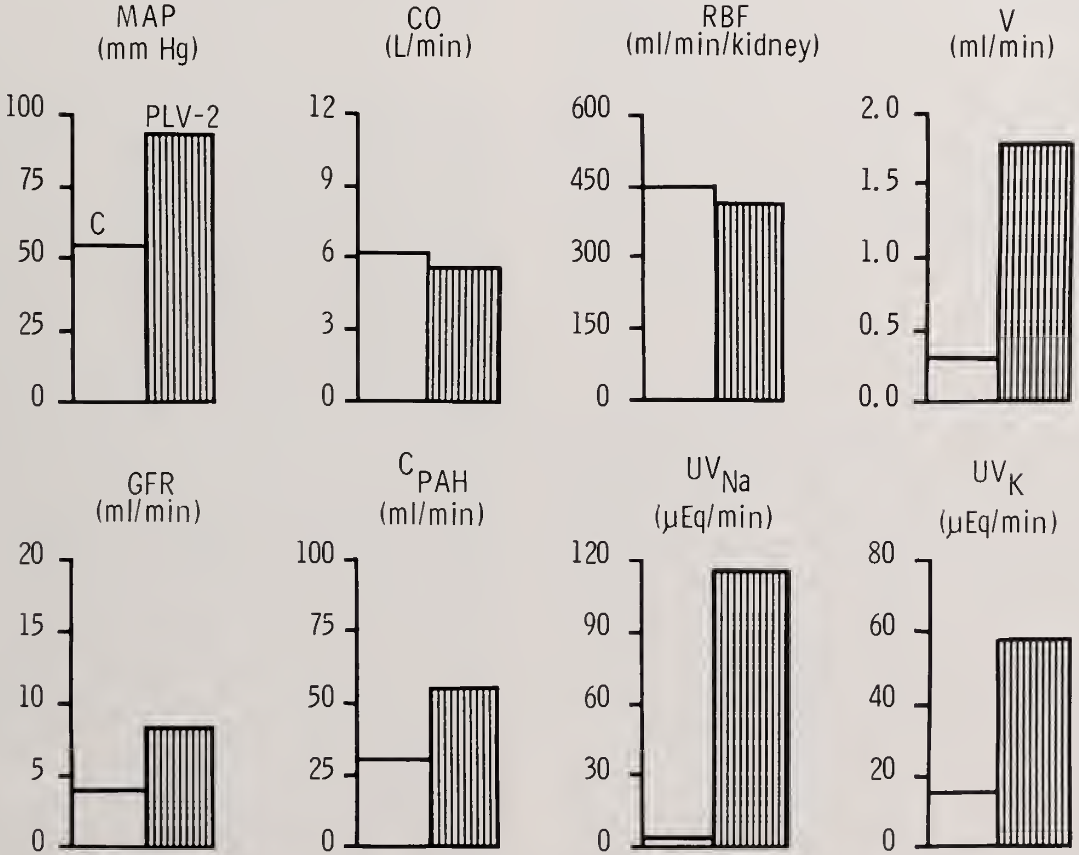

FIG. 3. Effect of PLV-2 infusion in patient 3. A rise in arterial pressure (MAP) unaccompanied by changes in CO or RBF results in slight increases in GFR and PAH clearance and a striking solute diuresis.

Case 3. J. M., a 45-year-old draftsman, was admitted with a 3-week history of increasing jaundice. He gave a history of ingesting a pint of whiskey daily for 20 years. On admission he was disoriented and deeply jaundiced with spider angiomata on his chest. The blood pressure was 90/40 mm. Hg, and the pulse rate 90. The liver was enlarged and tender, and there were moderate ascites and pitting peripheral edema.

The BUN was 59 mg. per 100 ml. on admission, and the urine output ranged from 100 to 600 ml. per day. On the ninth hospital day the BUN had risen to 105 mg. per 100 ml. (table 1), and urine output had fallen to 12 ml. per hour. Infusion of PLV-2 resulted in a striking increase in urine volume from 0.2 to 2.3 ml. per minute and sodium excretion from 1 to 150 μEq. per minute. No specific treatment was given during the next 5 days, and the urine output was less than 500 ml. per day. The BUN rose to 147 mg. and the creatinine to 7.3 mg. per 100 ml. Blood was oozing from multiple sites, including the gastrointestinal tract, and whole blood was administered to maintain a stable hematocrit. On the fifteenth day hemodynamic studies were performed (table 2), and PLV-2 was again administered (figure 3).

During the next 5 days intermittent injections of PLV-2 maintained the blood pressure at 100–110/50–60 mm. Hg and the urine output ranged from 500 to 1,740 ml. per day. By the twentieth day this creatinine had fallen slightly to 6.9 mg. per 100 ml., but the BUN had risen to 216 mg. per 100 ml. Because the persistent bleeding was possibly aggravated by uremia, hemodialysis was performed. Following dialysis the patient was again given intermittent PLV-2 in 5-unit subcutaneous doses, which maintained the urine output between 500 and 700 ml. per day. When PLV-2 was withheld the blood pressure fell and the urine flow decreased.

Gastrointestinal bleeding continued and dialysis was performed again on the thirty-first day. Although the urine output thereafter was maintained at about 20 ml. per hour with intermittent PLV-2 and serum creatinine was stable, continued gastrointestinal bleeding could not be controlled and the patient died following a massive hematemesis on the thirty-seventh hospital day.

Postmortem examination revealed a perforated duodenal ulcer and multiple ulcerations of the esophagus and stomach. There was Laennec's cirrhosis and marked hepatocellular necrosis. The kidneys were deeply jaundiced but exhibited no other specific abnormalities. The heart showed dilatation of both ventricles. There was acute bilateral bronchopneumonia.

Case 4. R. H., a 45-year-old salesman with a long history of heavy alcoholic intake, was admitted because of abdominal swelling. On admission he was jaundiced and wasted with moderately tense ascites. The blood pressure was 140/95 mm. Hg and pulse 96 and regular. Following admission the patient became febrile and experienced delirium tremens and signs of hepatic precoma. Chest X-ray films revealed pneumonia, which was treated with penicillin. A urine culture grew out more than 100,000 coliform and aerobacter species, sensitive to Coly-Mycin®. Treatment was instituted with Coly-Mycin and later changed to sodium cephalothin.

On the twenty-sixth hospital day the blood pressure fell to 70/40 mm. Hg and the urine output decreased to less than 350 ml. per day. Volume expansion with albumin and dextran increased the central venous pressure from 3 to 10 cm. H_2O without significantly increasing the urinary output. On the twenty-seventh hospital day a large hematemesis occurred and endoscopy revealed large esophageal and gastric varices. The bleeding was arrested by tamponade with a Sengstaken-Blakemore tube.

The urine volume remained extremely low, and hemodynamic studies were performed on the twenty-eighth hospital day. Laboratory values at this time are shown in table 1 and hemodynamic data in table 2. The urine sodium concentration was now 46 mEq. per liter. Infusion of PLV-2 resulted in a rise in arterial pressure, a moderate increase in renal blood flow, and a 3-fold increase in urine flow from 0.1 to 0.3 ml. per minute. Infusion of acetylcholine into the right renal artery produced a profound increase in blood flow to 920 ml. per minute with a slight further increase in urine output to 0.4 ml. per minute. Furosemide, 20 mg. administered into the renal artery, did not further augment the urine flow.

Infusion of PLV-2 was continued over the next 5 days. The blood pressure was supported at 100–120/50–60 mm. Hg. The urine output was maintained at between 950 and 1,300 ml. per day. When PLV-2 was discontinued the blood pressure and urine output fell. The BUN rose slowly to 83 mg. per 100 ml. despite the adequate urinary output, but the patient became more alert. However, chest X-ray films showed extension of the bronchopneumonia, and the patient died suddenly on the thirty-third hospital day.

Autopsy permission was not granted.

Discussion

The 4 patients discussed in this report all developed oliguria and azotemia during the course of decompensated cirrhosis of the liver. Postmortem examination performed in 3 failed to demonstrate a significant anatomic lesion in the kidney. A variety of factors could have contributed to renal failure. Blood loss was a problem in cases 1, 3 and 4; diuretics had been administered in case 2; and infection was either suspected or demonstrated at autopsy in all 4 patients. This multiplicity of possible etiologic factors in the genesis of renal failure in this syndrome has been noted also in previous studies of similar patients.[2, 3, 13] Although infection or hypovolemia may thus precipitate or aggravate the renal failure, the cirrhotic patient apparently has a peculiar sensitivity of his kidney so that relatively mild insults may result in progressive and usually irreversible renal failure. Furthermore, some patients develop a similar clinical syndrome spontaneously without any apparent initiating cause other than liver disease (case 3).

The absence of specific histologic renal abnormalities in these patients and the frequency of circulatory abnormalities in cirrhotic patients have led to the widespread belief that the renal failure in this syndrome may at least be due partially to changes in hemodynamics. If hypotension or reduced renal blood flow were the cause of the renal failure in these patients, drugs which raise arterial pressure or increase renal perfusion should tend to correct the oliguria.

Treatment with several regimens was effective in stimulating an increase in urine flow. PLV-2 (octapressin), a synthetic analogue of vasopressin which produces systemic vasoconstriction associated with an increase in renal blood flow,[14] was administered to 3 of the patients and resulted in an increase in arterial pressure and a striking solute diuresis. The response was most dramatic in case 3, in whom hypotension was the only prominent hemodynamic abnormality. The diuresis was sustained for almost 3 weeks in this patient by intermittent injections of the drug. In 2 patients infusion of acetylcholine directly into the renal artery resulted in a marked rise of renal blood flow[15] and an increase in urine flow, although the functional response was blunted in case 4 because tubular necrosis had already developed. In case 2 the reduced renal blood flow was thought to be due to a relatively low cardiac output[16] and an inadequate circulating blood volume.[7] Expansion of circulating volume by reinfusing ascitic fluid resulted in a significant increase in both cardiac output and renal blood flow accompanied by a marked augmentation of urine flow.

Although total renal blood flow usually is low in the oliguric patient with severe liver disease,[7] it is likely that the renal cortical blood flow is even more severely reduced. PAH extraction, an index of the ratio of cortical to medullary flow,[17] was markedly reduced in the 3 patients in whom it was measured, consistent with the observations of Schroeder et al[18] in similar patients. One patient (case 3), who had nearly normal renal blood flow calculated from dye dilution curves, extracted only 33 per cent of the PAH delivered to his kidney at a time when tubular function apparently was not impaired. These results suggest a marked disturbance in intrarenal distribution of blood flow, with reduced effective cortical perfusion and a lowered glomerular filtration rate. Since PLV-2 may increase cortical blood flow,[14] the dramatic renal functional response to the drug in 3 of the patients in this series could be attributed in part to redistribution of intrarenal blood flow.

Nonhemodynamic factors also may play a role in the course of the hepatorenal syndrome. Primary changes in glomerular or tubular function, either related to liver disease or to coëxisting renal disease, could contribute to the renal failure. Indeed, tubular functional impairment may frequently develop in the late stages of the syndrome, as it did in 2 patients in this series who exhibited spontaneously high urine sodium concentrations. Why tubular damage developed very slowly in patient 1 but rapidly in patient 4 is not understood, unless it relates to the severity or nature of the initiating insult. It is likely, however, that maintenance of an adequate tubular flow of urine during the early phases of the syndrome may forestall the development of frank tubular necrosis.[19]

The failure of these 4 patients to survive despite partial correction of their renal hemodynamic abnormality is a reflection of the precarious state of the patient with liver failure. Hemorrhage, infection and hepatic coma are the usual causes of demise in these patients. Translation of effective management of the circulatory aspects of this disease into improvement in survival rates must therefore await improved management of the metabolic and hematologic problems of hepatic failure.

Summary

Studies in 4 selected patients with progressive renal failure and decompensated cirrhosis revealed that, despite a wide range of systemic and renal hemodynamic findings, markedly decreased renal blood flow or hypotension were always present. Specific therapy was administered to correct hypotension and/or to increase renal blood flow. Improvement in the circulatory disturbance always led to an increase in urine output, thus implying that hemodynamic factors play an important role in the pathophysiology of the hepatorenal syndrome.

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Metastatic Mucosal Tumors of the Small Intestine*

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Although primary tumors of the small bowel occur infrequently, both benign and malignant varieties have been thoroughly described in the literature. In contrast, little attention has been paid to tumors metastatic to the mucosa or submucosa of the small bowel except in radiologic[1-6] and surgical[7-14] journals. Metastatic small-bowel tumors may be single or multiple; may produce subacute or chronic symptoms and radiologic findings mimicking primary small bowel tumors; or they may cause relatively acute symptoms suggestive of intestinal obstruction and/or perforation, requiring immediate surgical intervention. In spite of the relatively few reports on this subject, it is apparent that malignant melanoma most frequently metastasizes to this organ.[1, 7-10, 15-20] Carcinomas of the cervix,[9, 21] kidney,[9, 22] breast,[11] and gastrointestinal tract[9, 23] also metastasize with some frequency to the small bowel. Rarely is the lung incriminated as a primary organ site.

During a 3-year period, from 1966 through 1968, 10 cases of carcinoma metastatic to the mucosa and submucosa of the small bowel were observed in this institution. Three of these patients required surgical intervention. The remaining 7 cases were identified at autopsy. The possibility that this apparently increased incidence of carcinoma metastatic to the small bowel might be related to primary site, cell type, or previous chemotherapy prompted a retrospective study of the 10 cases.

Materials and Methods

The clinical records and pathology material of the 10 cases were reviewed in detail. All surgical and autopsy materials were fixed in buffered 10 per cent formalin, embedded in paraffin, and sectioned at 3–5 microns. The primary and metastatic small bowel tumors were stained routinely with hematoxylin and eosin. PAS, mucicarmine, Fontana silver, and Gomori's iron stains were also performed. Only those cases were studied in which metastatic nodules appeared to originate distinctly as mucosal or submucosal implants. Patients with peritoneal carcinomatosis and obvious invasion of the intestinal muscular coat from without were not included in this study.

Clinical Observations

A summary of the pertinent clinical information is included in table 1. Nine of the 10 patients were males. Since the Veterans Administration Hospital population is predominantly male, this sex differential is not relevant. The ages of the patients ranged from 23 to 74. Seven of the patients were between 34 and 58 years. Five patients were white, 5 Negro.

Two of the patients had malignant melanoma; one of these had a primary lesion on the skin of the chest, the other was believed, clinically, to have a primary bronchogenic carcinoma. Five of the patients had primary bronchogenic carcinoma. Three of the patients had previously diagnosed primary tumors of the testis (embryonal carcinoma), stomach (signet-ring carcinoma), and cecum (well-differentiated adenocarcinoma).

Three patients had no symptoms referable to their small-bowel metastases. Four had symptoms suggestive of intestinal involvement, ranging from mild abdominal distention to crampy periumbilical pain and tenderness, postprandial fullness, nausea, vomiting, and obstipation. These symptoms occurred in the terminal phase of the illness, and surgery was either not required or contraindicated. Three patients developed symptoms of relatively acute intestinal obstruction and/or perforation requiring surgical intervention.

The most consistent laboratory abnormality in the 10 patients was a low hematocrit, which ranged from 22 to 38 per cent in the 10 cases. In spite of the mucosal involvement and ulcerations, stool guaiac tests, when performed, were negative.

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* Presented in part before the International Academy of Pathology, March 11, 1969, during its Fifty-eighth Annual Meeting in San Francisco, Calif.

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TABLE 1: Clinical Summary of Ten Cases of Small Intestinal Metastases

Case	Age/Race	G.I. Symptoms	Diagnosis	Treatment	Time (mos.)†
1. (G. R.)*	45/W	Obstruction	X-ray; surgery	Surgery; chemotherapy	30
2. (C. B.)	46/W	Yes	No	None	3
3. (W. D.)	53/N	Perforation	Surgery	Surgery; irradiation	3
4. (C. McP.)	35/N	Yes	No	None	1
5. (V. S.)	73/W	No	No	None	4
6. (E. J.)	45/N	No	No	None	<1
7. (J. C.)	58/N	Yes	No	Surgery	12
8. (J. K.)	23/W	No	No	Surgery; irradiation; chemotherapy	10
9. (W. B.)	74/N	Yes	No	Surgery; irradiation; chemotherapy	24
10. (L. C.)	58/W	Obstruction	Surgery	Surgery	10

* Case 1 is the only female.
† From initial diagnosis of malignancy to death.

Lactic dehydrogenase was performed routinely on all patients admitted to the Medical Service. These were consistently elevated, ranging from 320 to 2,860 units. LDH's were not recorded on patients admitted to the Surgical Service prior to exploratory laparotomy. One of these (case 1), on a subsequent admission, had an LDH of 2,000 units.

Upper gastrointestinal X-ray examinations were performed on only 3 of the 10 patients. In case 1, a constricting midjejunal lesion was identified. In case 3 loops of bowel were dilated and contained fluid levels.

The clinical courses of the 3 patients subjected to surgery are briefly summarized below:

Case 1. G. R., a 43-year-old white woman, was admitted to the hospital in April 1965 with a 12 by 10 cm. fungating substernal mass which had been present for approximately 14 months. The mass was resected and a skin graft inserted. A diagnosis of malignant melanoma was made. One year later, in April 1966, the patient was readmitted complaining of postprandial nausea and vomiting. Physical examination and laboratory results were within normal limits except for evidence of anemia with a hematocrit of 26 per cent. Stool guaiac tests were negative. An upper G.I. X-ray series revealed a constricting lesion of the midjejunum (figure 1). On exploratory laparotomy an ulcerated mucosal neoplasm was found. The patient subsequently developed metastases to the liver and to the skin and soft tissues of the neck and abdomen. She died in October 1967. An autopsy was not obtained.

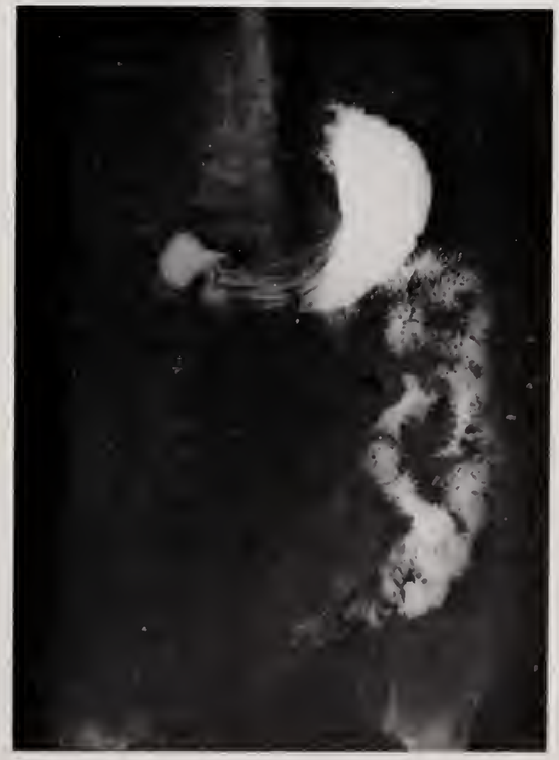

FIG. 1. Case 1. Metastatic small bowel lesion (arrow).

Case 3. W. D., a 53-year-old Negro male, was admitted to the hospital in September 1966 with the chief complaint of aching and pain in the abdomen of 1 week's duration. He had had no bowel movements for 4 days and had vomited several times in the 2 days prior to admission. On physical examination the abdomen was distended and tender. No rebound was noted. Bowel sounds were increased, high-pitched, and associated with bowel rushes. A mass was felt in the left lower quadrant. On exploratory laparotomy the patient was found to have abscesses in the left subdiaphragmatic and pelvic region, and a perforated neoplastic mass was found in the jejunum. At surgery the lesion was considered to be a primary small bowel tumor and was treated as such. He died 5 days postoperatively. An autopsy was performed.

Just prior to the laparotomy it was learned that the patient had been admitted to this hospital in July 1966 with symptoms suggestive of a right Pancoast tumor. A needle biopsy of the lung tumor revealed an anaplastic carcinoma for which he received radiotherapy without apparent benefit.

Case 10. L. C., a 58-year-old Negro male, had an abdominoperineal resection for carcinoma of the cecum with lymph node metastases in May 1967. In December 1967 he was admitted to the hospital with symptoms suggestive of small-bowel obstruction. At laparotomy, tumors were identified in the peritoneum, liver, and abdominal wall. Two segments of the small bowel were obstructed. A by-pass was performed. The procedure was tolerated and the patient discharged. He was readmitted in February 1968 in a terminal state. An autopsy was performed.

Pathologic Findings

The primary site, histologic features, and metastatic sites of the 10 cases are summarized in table 2. All but one of the patients (case 1) had an autopsy. Grossly the small-bowel lesions were multiple and showed variable patterns. In some the tumor had small sessile or pedunculated mucosal projections measuring from 1 to 2 cm. in diameter (figure 2). Other tumors were solid grayish-white polypoid submucosal masses, covered by a thin intact mucosa, or by an ulcerated mucosa (figure 3). In the latter instances the masses had a central crater-like appearance. These tumors measured from 1 to 5 cm. in greatest diameter. In the surgical specimen of case 1 the mucosa was replaced by a superficially ulcerated

TABLE 2: Pathology Findings of Ten Cases of Small Intestinal Metastases

Case/Primary	Histology	Metastases
1. (G. R.) Skin	Melanoma	Lymph nodes, subcutaneous tissue, mesentery (liver, abdominal mass*)
2. (C. B.) Not Found	Melanoma	Lungs, myocardium, liver, gallbladder, adrenals, thyroid, pituitary, large bowel, urinary bladder, bone, brain, lymph nodes
3. (W. D.) Lung	Anaplastic (giant cell)	Lungs, myocardium, lymph nodes, kidneys, adrenals, brain
4. (C. McP.) Lung	Anaplastic (organoid, clear cell)	Lungs, lymph nodes, liver, esophagus, stomach, kidneys, adrenal
5. (V. S.) Lung	Anaplastic (giant cell)	Adrenal and retroperitoneal tissues, brain
6. (E. J.) Lung	Anaplastic (clear cell)	Myocardium, lymph nodes, large bowel, brain
7. (J. C.) Lung	Anaplastic (giant cell)	Thyroid, subcutaneous tissue, lymph nodes, esophagus, duodenum, large bowel, liver, bone, spleen, adrenals, kidneys, urinary bladder, myocardium, brain
8. (J. K.) Testis	Embryonal cell	Lungs, lymph nodes, liver, adrenal, brain
9. (W. B.) Stomach	Adenocarcinoma ("signet ring")	Liver, large bowel, urinary bladder, prostate
10. (L. C.) Cecum	Adenocarcinoma	Large bowel, liver, lung, spleen, lymph nodes

* Clinical metastatic sites without tissue confirmation.

fungating mass with fine nodular edges. The mass measured 4.5 by 3.5 by 1.5 cm. and involved almost three-fourths of the circumference of the bowel. The tumor, on sectioning, was grayish-white and invaded the inner muscular layer but did not appear to approach the serosa grossly. In the second surgical specimen (case 3) the tumor measured 2 by 1 cm. in diameter, had an ulcerated surface, and was perforated. There was evidence of peritonitis in the adjoining serosa.

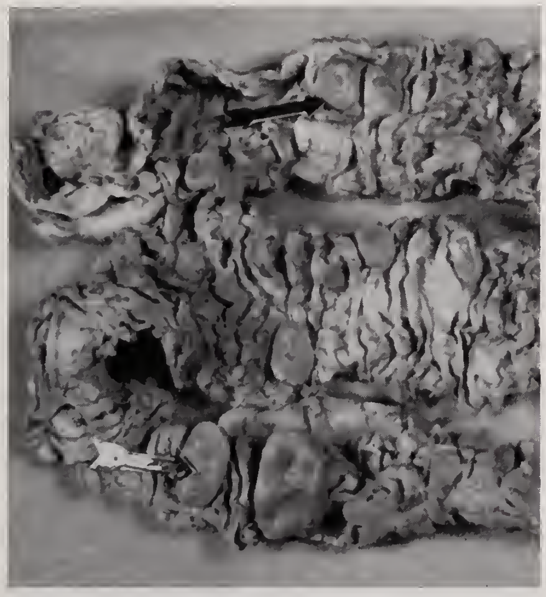

FIG. 2. Sessile and pedunculated mucosal projections of metastatic tumor.

With the exception of a well-differentiated mucus-producing carcinoma, metastatic from the cecum, and a signet-ring carcinoma, metastatic from the stomach, all the tumors were anaplastic in nature, and the majority had a striking and dominant giant-cell component (figure 4). It was impossible to differentiate, on a histologic basis alone, the melanomas, the primary testicular tumors, or the lung tumors. One of the tumors, considered clinically and grossly to be a bronchogenic carcinoma, was identified as a melanoma with the Fontana silver stain. The primary site of this tumor was not established.

In general, the neoplastic cells tended to be arranged in lobules separated by thin vascular fibrous strands. Cells were arranged in an individual cell pattern, or occasionally in small nests or sheets. In areas, the cells formed polypoid structures projecting from the mucosa (figure 5). Neoplastic cells were irregular in shape and had bizarre, enlarged vesicular nuclei with multiple nucleoli. Many binucleated, trinucleated, and multinucleated giant cells and atypical mitoses were noted. Cytoplasm varied from sparse to abundant to syncytial in character and contained fine or coarse, clear mucicarmine-negative vacuoles. In 2 of the tumors (1 a melanoma and 1 a bronchogenic carcinoma) many nuclei contained large acidophilic inclusions. The small-bowel melanoma metastases were amelanotic. Melanin granules were identified by silver stains in the primary tumor of case 1. Only cerebral metastases in case 2 contained melanin granules. One of the bronchogenic carcinomas had an anaplastic organoid pattern, with sheets and nests of cells separated by sinusoidal structures engorged with blood. Venous and lymphatic invasion was demonstrated in all cases.

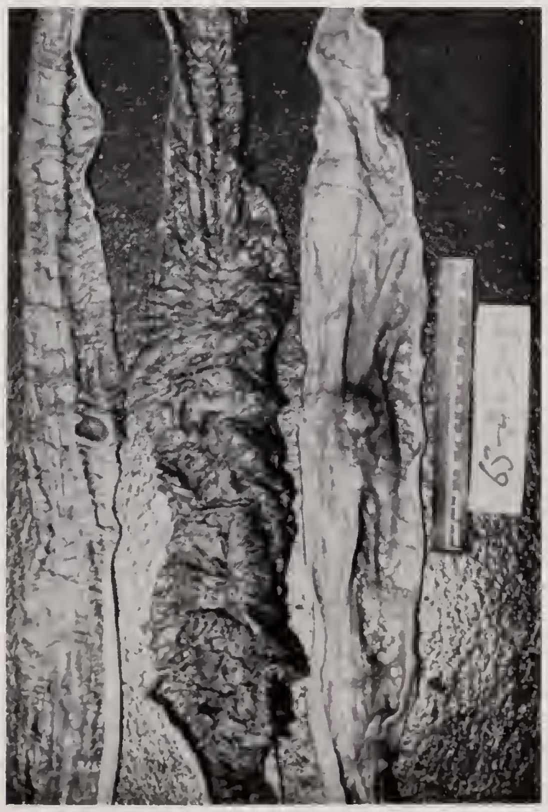

FIG. 3. Metastases with ulcerations (left segment) and with thin intact mucosa (right segment).

Discussion

Most standard references of pathology[24-30] give little or no mention of metastatic lesions of the small bowel. De Castro et al[9] reported the first large series of small bowel metastases in 1957. These authors reviewed the Mayo Clinic files for a 50-year period, from 1905 through 1954, and found 101 cases of small-bowel obstruction due to metastatic tumors which required surgical intervention. Twenty-six of these patients who had definite evidence of a primary tumor elsewhere and no evidence of peritoneal carcinomatosis and 25 similar cases found in the literature over the same 50-year period were described in detail. The primary sites of tumors included melanoma, 20; cervix, 6; skin, 1; kidney, 9; ovary, 4; stomach, 2; and colon, 4. None of the patients in De Castro's series had primary lung tumors. Only sporadic case reports have appeared in the literature[5, 13, 14, 31, 32] since citing the lung as a primary organ site.

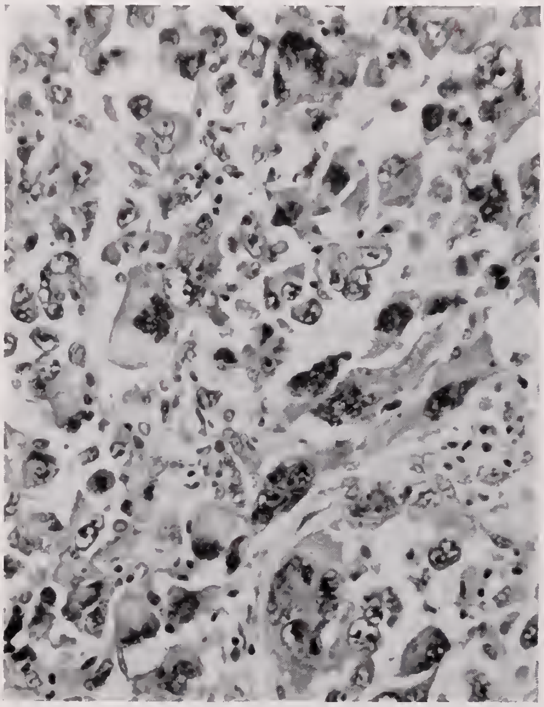

FIG. 4. Tumor giant cells (case 5) typical of majority of metastatic tumors.

Of the 10 cases in this present group 5 patients had anaplastic bronchogenic carcinomas. The metastatic patterns were widely variable from patient to patient; in some there were widespread metastases involving almost all organ sites; in others only a few organs were involved. Survival from the time of diagnosis of the primary tumor to death varied from 1 to 30 months. Survival time of patients with primary tumors of the lung ranged from 1 to 12 months. Although the patients' ages were also variable, the majority ranged from 34 to 58.

The treatment administered to these patients, excluding the surgical emergencies, also varied. Four patients received only supportive therapy. One patient (case 3) received irradiation prior to exploratory laparotomy. Two patients received irradiation and chemotherapy following diagnosis of the primary tumor (case 8, embryonal carcinoma of the testis, and case 9, signet-ring carcinoma of the stomach). One patient (case 1) with the melanoma of the chest wall received only chemotherapy following initial diagnosis. None of the patients received steroids. There is, therefore, no apparent correlation in this group between the type of therapy and the frequency of this metastatic lesion, as has been postulated in some references which suggest that gastrointestinal metastases may be more common in patients treated with chemotherapy or steroids.[11, 13]

Except for those patients with obstruction and/or perforation requiring laparotomy, diagnosis of these lesions from clinical signs, symptoms, laboratory tests, or X-ray examinations was not made in the premortem state.

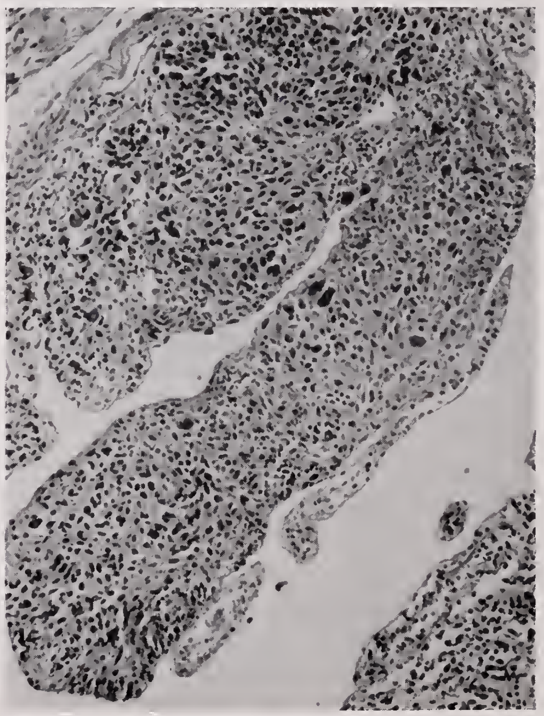

FIG. 5. Malignant polypoid structure projecting from mucosa.

Awareness that this lesion may be a surgical emergency was vividly demonstrated by the 2 cases with obstruction, and especially by the case with perforation. This patient had a history of carcinoma of the lung when he appeared with signs and symptoms compatible with a perforated viscus. The tumor, grossly, appeared to be a primary carcinoma of the small bowel and was treated as such by the surgeons. Postmortem demonstration of a definite primary carcinoma of the lung and the similarity of the primary and metastatic lesions helped to clarify this erroneous impression. Metastatic tumors to the small bowel should be included in the list of diagnostic possibilities of any small-bowel lesion. A solitary metastatic lesion, associated with mucosal destruction, mimics closely a primary small-bowel carcinoma. These tumors can occur acutely with evidence of perforation, subacutely with evidence of hemorrhage, or chronically with evidence of partial obstruction.

The majority of nonmelanotic primary sites reported in the literature were either abdominal or subdiaphragmatic in location. Six of the 10 primary tumors in the present cases were supradiaphragmatic in origin. Solitary lesions with segmental obstruction of the small intestine in a patient with a previous diagnosis of an extra-abdominal malignancy may present a diagnostic challenge to both the surgeon and the pathologist. The possibility that the lesion represents a metastatic malignant tumor should always be borne in mind.

Summary

Ten cases with multiple metastatic lesions to the small bowel with mucosal involvement have been presented. Five of the patients had primary anaplastic lung carcinoma, 2 had melanomas, and 3 were associated with abdominal malignant tumors. There is an apparent increase in incidence of this phenomenon in this hospital which does not correlate with site, type of tumor, metastatic pattern, age, or type of treatment. Awareness that this lesion can be associated with supradiaphragmatic malignancies and appear as a surgical emergency with obstruction or perforation has been stressed.

We wish to thank Mrs. P. Hoffman for her assistance in preparing the manuscript, and the Medical Illustration Department, Veterans Administration Hospital, Washington, D. C., for the illustrative material.

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Pulmonary Function Studies in Systemic Sclerosis (Scleroderma)

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The lung is one of the organs most frequently involved in systemic sclerosis.[1, 2] The patient may complain of dyspnea, cough, roentgen evidence of pulmonary fibrosis, or findings related to other organ involvement. Previous studies have shown that the patient's clinical history does not always correlate with the roentgen appearance.[3, 4] Therefore, pulmonary function tests become important to quantitate the degree of involvement, assess the presence or absence of disability, follow the course of the disease, and allow early detection of pulmonary involvement in cases in which the clinical and radiologic signs are not evident.

Material and Methods

All patients with the diagnosis of scleroderma studied in the cardiopulmonary laboratory of the Washington Veterans Administration Hospital in the past 5 years are included in this report.

Pulmonary function studies included:

Lung volumes. The vital capacity (VC) and expiratory reserve volume (ERV) were measured on a 13.5 liter respirometer.§ The functional residual capacity (FRC) was determined by the open circuit nitrogen washout technique, and the residual volume (RV) was obtained by subtracting the ERV value from the FRC.

Expiratory flow rates. A waterless Wedge Spirometer|| was used to measure the forced expiratory volume in 1 second ($FEV_{1.0}$) from a forced vital capacity (FVC). The $FEV_{1.0}/FVC$ ratio was calculated and expressed as a percentage. The maximum voluntary ventilation (MVV_f) was measured at no set respiratory rate other than being at a frequency exceeding 50 breaths a minute.

Diffusion capacity. The diffusion capacity of the lung (DLCO) was assessed by the single breath method with carbon monoxide as the inspired gas.

Arterial blood gases. Blood was sampled from an indwelling arterial Cournand needle. Determinations of oxygen tension (PO_2), carbon dioxide tension (PCO_2) and pH were made on an Instrumentation Laboratory¶ apparatus with glass electrodes. Specimens were sampled while the patient was at rest breathing room air during a standard exercise and while breathing 100 per cent oxygen for 10 minutes.

Ventilatory and alveolar function. Timed collection of expired gases for determination of O_2 and CO_2 concentration allowed the calculation of alveolar and dead-space ventilation ($\dot{V}A$ and $\dot{V}D$). Total ventilation ($\dot{V}E$) was determined by collecting and measuring the volume of expired gas in a unit time. The ratio of dead-space ventilation to total ventilation ($\dot{V}D/\dot{V}E$) was calculated.

TABLE 1: Age and Sex of Patients

Age (years)	Sex
51	F
50	M
49	F
57	M
38	M
44	M
18	F
39	M
42	M
Range: 18–57 years Average: 43.1 years	3 Females 6 Males

Results

The number, age and sex of the subjects studied are shown in table 1. There were 9 patients, 6 males and 3 females, with ages ranging from 18 to 57 years and an average of 43.1 years.

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|| Med-Science, St. Louis, Mo.

¶ Instrumentation Laboratory, Inc., Boston, Mass.

The lung volumes and expiratory flow rates were determined in 8 patients; the results are shown in tables 2 and 3.

TABLE 2: Lung Volumes

Patient	Vital Capacity (liters)		Residual Volume (liters)		Total Lung Capacity (liters)	
	A*	P†	A	P	A	P
B. M.	2.7	90	1.5	115	4.2	98
D. S.	2.6	60	2.1	117	4.5	74
P. R.	3.0	68	2.2	122	5.2	78
P. H.	3.3	62	1.4	78	4.7	68
P. J.	4.0	82	1.2	71	5.2	82
R. R.	3.0	79	1.0	91	4.0	77
W. G.	3.9	78	2.4	141	6.3	94
W. M.	4.9	104	1.5	94	6.4	105

* Actual
† Per cent of predicted

TABLE 3: Expiratory Flow Rates

Patient	$FEV_{1.0}$ as per cent of VC		MVV_f (L/min.)
	A*	P†	
B. M.	81	82	120
D. S.	89	79	91
P. R.	73	82	97
P. H.	76	82	101
P. J.	62	78	108
R. R.	94	87	124
W. G.	68	80	80
W. M.	81	80	168

* Actual
† Predicted

The vital capacity was normal in 3 patients and slightly to moderately reduced in 5 (<80 per cent of predicted). Total lung capacity was mildly reduced in 4 patients; the residual volume was slightly increased in 2 patients, reduced in 2, and normal in the others.

The $FEV_{1.0}$ expressed as percentage of the VC was normal in 6 patients and only slightly reduced in 2 (<70 per cent). Maximum voluntary ventilation was moderately reduced in 3 patients, but the values were all above 80 L/min., thus excluding any significant airway obstruction.

The results of arterial blood-gas analysis in 9 patients are shown in table 4. Oxygen tension at rest was normal in 5 patients ($PO_2 > 80$ mm. Hg). Severe hypoxemia ($PO_2 < 55$ mm. Hg) was noted in 2 patients, and both had a further drop in O_2 tension during exercise; their response to 100 per cent O_2 breathing was not tested. One patient with moderate hypoxemia did not achieve a normal O_2 tension during 100 per cent O_2 breathing (normal > 550 mm. Hg).

Carbon dioxide tension (PCO_2) was low in 3 patients (<35 mm. Hg) indicating mild resting hyperventilation. PCO_2 was normal in 5 subjects and mildly elevated in 1; hypoventilation in this patient was thought to be of a central origin rather than secondary to pulmonary disease since his ventilatory studies showed no significant impairment.

Table 5 shows the results of the DLCO, which

TABLE 5: Diffusing Capacity
(ml./min./mm. Hg)

Patient	Actual	Predicted
B. M.	22	20–30
D. S.	31	20–30
P. R.	14.4	20–30
P. J.	28.4	20–30
R. R.	22	20–30
W. G.	12	20–30
W. M.	30	20–30

TABLE 4: Arterial Blood Gases

Patient	RRA*			Exercise			100 per cent O_2		
	PO_2 (mm. Hg)	PCO_2 (mm. Hg)	pH	PO_2 (mm. Hg)	PCO_2 (mm. Hg)	pH	PO_2 (mm. Hg)	PCO_2 (mm. Hg)	pH
B. M.	101	32	7.51	—	—	—	635	24	7.62
D. S.	100	38	7.43	—	—	—	543	36	7.39
G. C.	47	31	7.47	41	28	7.48	—	—	—
P. R.	51	34	7.51	36	37	7.47	—	—	—
P. H.	85	49	7.39	93	48	7.34	581	50	7.39
P. J.	63	40	7.43	75	43	7.36	495	41	7.38
R. R.	101	41	7.43	108	37	7.42	623	32	7.46
W. M.	78	40	7.40	87	36	7.37	559	37	7.42
W. G.	89	35	7.44	105	36	7.40	560	34	7.44

* Resting room air

was determined in 7 patients. Only 2 had an abnormal value.

Studies of alveolar ventilation were carried out in 7 patients. The results are shown in table 6.

TABLE 6: Ventilatory Studies
(L/min.)

Patient	$\dot{V}E$	$\dot{V}A$	$\dot{V}D$	$\dot{V}D/\dot{V}E$
D. S.	4.6	2.7	1.9	.41
G. C.	19.2	5.7	13.5	.70
P. H.	9.4	3.6	5.8	.61
P. J.	7.5	4.2	3.3	.44
R. R.	5.6	2.6	3.0	.53
W. G.	11.9	5.3	6.6	.55
W. M.	6.3	3.7	2.6	.41

Dead-space ventilation was increased consistently in all patients; this was reflected in a high $\dot{V}D/\dot{V}E$ ratio (normal $<.35$).

Discussion

Alterations of pulmonary function in scleroderma are due to pathologic changes that occur in the lung. Recently, autopsy observations[2] in this disease compared with matched controls confirmed interstitial fibrosis as the most common pulmonary lesion, having been encountered in 74 per cent of the cases; the fibrosis tended to be symmetric and particularly accentuated in the basilar areas. A more specific lesion, but occurring less frequently, involves pulmonary vessels, namely, arteriolar thickening, often associated with clinical evidence of pulmonary hypertension.

Chest-wall involvement in scleroderma may be encountered. However, its contribution, if any, to physiologic impairment is minor.[5]

Numerous studies have described pulmonary function abnormalities in scleroderma.[5-9] Most investigators seem to agree that an abnormal diffusing capacity of the lung is the most frequent alteration and often the earliest index to be altered.[10] Adhikari et al[5] showed a reduction in both components of the diffusing capacity, namely, the membrane diffusing capacity and the pulmonary capillary blood volume. A restrictive impairment characterized by a reduced vital capacity in the absence of airways obstruction is a common finding. In this series this was the most frequent abnormality, occurring in 62.5 per cent of the cases. Abnormality of the diffusing capacity occurred in only 28.5 per cent of the cases, which is a lesser incidence than most other reports.

Each patient who had a reduced MVV and $FEV_{1.0}$ was a cigarette smoker and may well have had some degree of chronic bronchitis. In the experience of this laboratory a reduction in MVV may occur in restrictive impairment, in the absence of intrinsic airways disease. This alteration is probably on the basis of reduced lung volumes, deformity in the airways secondary to scarring, or peribronchial fibrosis.

The mechanisms by which hypoxemia develops in patients with scleroderma may be related to a ventilation-perfusion imbalance. Pulmonary fibrosis renders alveoli less compliant and hence reduces ventilation in some areas of the lung; other areas may have impaired perfusion and act as dead space. Dead-space ventilation was commonly increased in this series and probably contributed to a ventilation perfusion inequality.

Summary

Pulmonary function was studied in 9 patients with scleroderma. Fifty per cent showed a restrictive ventilatory defect manifested by a reduced vital and total lung capacity. None had significant airways obstruction. Abnormalities in gas exchange manifested by various degrees of hypoxemia were noted in 4 patients; mild resting hyperventilation and respiratory alkalosis were present in 3 patients. Dead-space ventilation was consistently elevated. Hypoxemia and abnormal diffusion capacity for carbon monoxide are thought to be due to a ventilation-perfusion inequality.

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(*Continued on page 35*)

Relapsing Polychondritis Associated with Ulcerative Colitis

Report of a Case

WILLIAM E. REEFE, M.D., F.A.C.P.,* AND RADAMES SIERRA, M.D.†

SINCE JAKSCH-WARTENHORST[1] described the first case of relapsing polychondritis in 1923 over 60 cases have been recorded in the medical literature, the majority of them during the present decade. That this disorder is no longer a rarity was demonstrated by Dolan, Lemmon, and Teitelbaum[2] in 1966 when they were able to review 51 cases in the literature as compared to only 9 collected by Bean and his associates[3] in their review 8 years before. The disease, whose predominant symptoms are intermittent inflammation of the cartilage (ears, nose and tracheobronchial tree), eye disturbances (conjunctivitis, iritis and episcleritis), and arthritis, has been reported with increasing frequency associated with various systemic disorders. The term "relapsing polychondritis" introduced by Pearson[4] seems to have gained general acceptance and has replaced such terms as polychondropathia,[1] systemic chondromalacia,[5] panchondritis,[6] diffuse perichondritis,[7] and chronic atrophic polychondritis[3] that were used in the early reports.

This case is the second reported associated with ulcerative colitis[8] and the first in which the pathologic changes of polychondritis are shown.

Report of Case

This 41-year-old Negro male had the onset of bloody diarrhea in 1954 at the age of 26 while in the Army. He was hospitalized at Ft. Meade, Maryland, where a diagnosis of ulcerative colitis was made. He was treated with a bland diet, propantheline bromide (Pro-Banthine®), and salicylazosulfapyridine (Azulfidine®). On this regimen he did well, having only occasional bloody stools and mild abdominal cramping pains.

This persisted until 1959, when he developed joint symptoms for the first time. Both ankles, knees and wrists were swollen, tender and painful on motion. A chest X-ray film revealed bilateral hilar adenopathy, and the patient was hospitalized at the Veterans Administration Hospital, Perry Point, Maryland. He did not have pulmonary symptoms, eye symptoms, or erythema nodosum. His ulcerative colitis did not exacerbate during this period of time. Skin tests for tuberculosis and culture of gastric washings for acid-fast bacilli were negative. No biopsies were performed. A diagnosis of sarcoidosis was made, and the patient was treated symptomatically with salicylates for his polyarthritis. His joint symptoms completely cleared up in 3 weeks, and the chest X-ray film was negative a year later and has remained so since then.

He did well except for occasional bloody stools until February 1967 at which time he developed swelling and tenderness of both ankles, knees, wrists and shoulders. Coincident with this he had a flare in his ulcerative colitis. Sigmoidoscopy and a barium enema were confirmative of the diagnosis. Combined use of salicylates and indomethacin (Indocin®) resulted in some improvement in the arthritic symptoms. The colitis responded to the use of salicylazosulfapyridine.

In June 1967 the patient was seen for the first time in the Rheumatology Clinic at the Veterans Administration Hospital, Washington, D. C. Joint summary at this time was negative. The sclera of his left eye was injected and he gave a 2-month history of recurrent episodes of redness and burning of both eyes with increased lacrimation. An ophthalmologic consultant made a diagnosis of episcleritis for which he was treated with NeoDecadron® eye drops with good response.

In October 1967 he was seen with an exacerbation of the arthritis in his right wrist and right second metacarpal phalangeal joint, episcleritis o.s. and o.d., and a warm, swollen, tender left ear (figure 1). The pinna was warm, swollen, tender, and hyperpigmented. The ear lobe was not involved. Soft tissue X-ray films of the ears showed widening and smudging of the cartilage of the antihelix of the left ear (figure 2). At this time the diagnosis of polychondritis was entertained. One month later the right ear became similarly involved. Over the next several months he was treated with aspirin, 3.6 Gm. per day, with gradual subsidence of symptoms. The ears remained hyperpigmented and thickened but were no longer tender.

The following laboratory tests were within normal limits: hematocrit, white blood cell count and differential, urinalysis, serum albumin and globulin, blood glucose, serum calcium and phosphorus, serum uric acid, and 24-hour urinary acid mucopolysaccharide levels. Repeated L.E. preps and tests for rheumatoid factor were negative. Repeated chest X-ray films and X-ray films of the feet, ankles, hands, wrists and spine were within normal limits. The Wintrobe sedimentation rate was elevated and varied from 18 to 42 mm. per hour.

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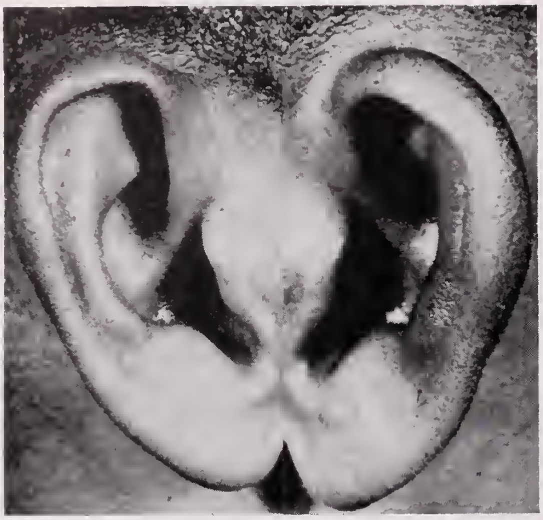

FIG. 1. Helix and antihelix of the left ear are swollen and hyperpigmented. The lobule is not involved. Right ear is normal.

In January 1969 the patient was hospitalized at the Veterans Administration Hospital, Washington, D. C. because of a flare-up of his ulcerative colitis. The arthritis did not flare up at this time. A barium enema showed absence of haustral markings in the descending colon, compatible with ulcerative colitis (figure 3). A rectal biopsy revealed polypoid masses that were partially lined by simple columnar epithelium which invaginated downward to form crypts. An ulcer extending to the muscularis mucosae was noted. The biopsy was compatible with ulcerative colitis. The cartilage of the left ear was biopsied and showed perichondrial tissue focally infiltrated by dense collections of chronic inflammatory cells, particularly plasma cells and lymphocytes (figure 4). This biopsy is consistent with chronic polychondritis. The colitis responded to bed rest, diet, and the resumption of salicylazosulfapyridine therapy.

Following discharge from the hospital the patient did well until April 1969 when he reported pain along the anterior aspect of the trachea and a choking sensation on lying supine. The upper cartilaginous rings of the trachea were tender to palpation. Chest X-ray films, tomograms of the trachea, indirect laryngoscopy, and an audiogram were within normal limits. The sedimentation rate was elevated. It was thought that these symptoms represented a reactivation of the polychondritis, this time involving the tracheobronchial tree. Because of the potential serious consequences of cartilaginous involvement at this site the patient was started on prednisone 20 mg. per day. He showed rapid improvement with decrease in tracheal cartilage tenderness and disappearance of the choking sensation on lying supine. His prednisone dosage is currently being tapered

Discussion

A 41-year-old Negro male with chronic ulcerative colitis of 15 years' duration has been presented. Clinically his course has been intermittent, chronic, mild, and controlled well with conservative management. Radiologically the ulcerative colitis involved the colon from the splenic flexure down to the rectum. The ulcerative colitis appears to be classical, both by sigmoidoscopy and biopsy of the rectal mucosa. Chronic ulcerative colitis limited to the left side of the colon tends to follow a somewhat milder course with less constitutional manifestations than those involving the entire colon.

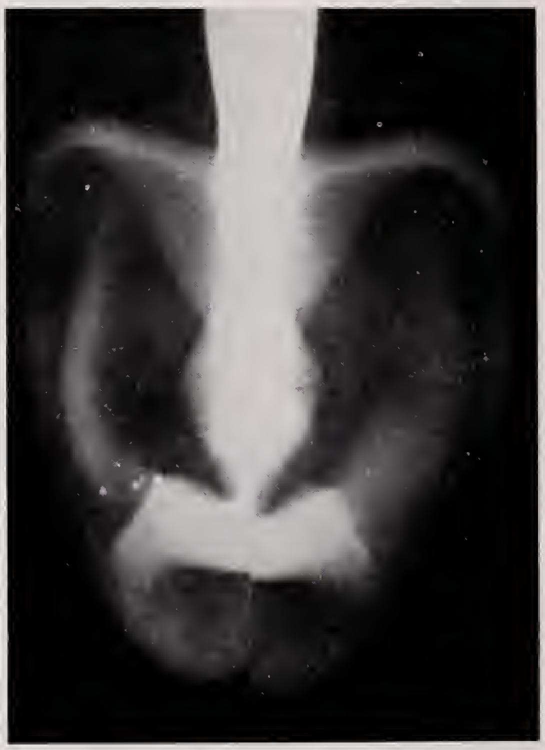

FIG. 2. Soft tissue X-ray film of the ears. Right ear is normal. The left shows widening and smudging of the cartilage of the antihelix with areas of decreased density suggesting chondrolysis in the upper segment. No calcification of the cartilage is evident.

Of primary interest are the 2 episodes of polyarthritis that occurred, the first, 5 years after the onset of his colitis, the second, 8 years later.

The first involved the ankles, knees, shoulders, and proximal interphalangeal joints of both hands. The arthritis had a duration of only a few weeks, was unassociated with systemic complaints, and cleared up completely without residuals. At no time did erythema nodosum or uveitis develop in this episode. This bout of arthritis was accompanied by bilateral hilar adenopathy which spontaneously regressed in the next 2 years without sequelae. The patient also had a negative tuberculin skin test at this time. Although the arthritis associated with ulcerative colitis can occur in this way,[9] it is much more likely that this is a type of arthritis seen with sarcoidosis, namely, Lofgren's syndrome.[10, 11] Unfortunately, without the history of erythema nodosum or biopsy evidence from another site, one cannot accept this as a proven case of sarcoidosis. It would seem unlikely that this episode represented the arthritis of ulcerative colitis since it was of such short duration, not accompanied by a flare-up in the colitis, was accompanied by bilateral hilar adenopathy, cleared up completely, and did not recur for 8 years.

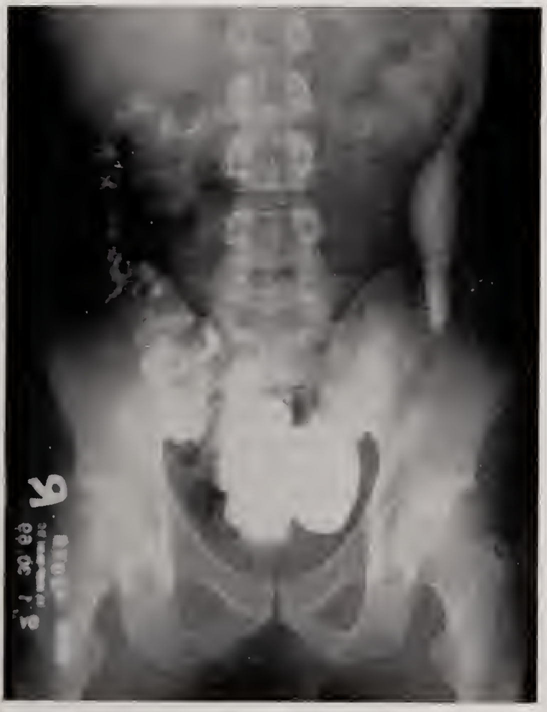

FIG. 3. Barium enema demonstrating lack of haustral markings from the splenic flexure to the rectum.

The second episode of polyarthritis involved the same joints as before plus the wrists. An exacerbation of the colitis accompanied this attack followed in several weeks by the development of episcleritis. Since eye symptoms of conjunctivitis, episcleritis, or iritis are seen in roughly 5 per cent of patients with ulcerative colitis[12, 13] it was thought originally that the episcleritis was a manifestation of the ulcerative colitis. It was also thought that the arthritis represented the arthritis of ulcerative colitis. Approximately 20 per cent of the patients with ulcerative colitis develop arthritis, the majority having polyarthritis of peripheral joints. In those with peripheral arthritis a simultaneous flare-up of the colitis and the arthritis is not uncommon. The duration of these attacks averages a few weeks, though occasionally the course is protracted and lasts for several months. A smaller percentage of patients have spondylitis as a manifestation of their joint symptoms. Radiographically the sacro-iliac joints show irregular, patchy areas of erosion and sclerosis resembling the spondylitis of Reiter's disease. At no time did our patient have back symptoms or findings, and X-ray films of his spine and sacro-iliac joints were within normal limits.

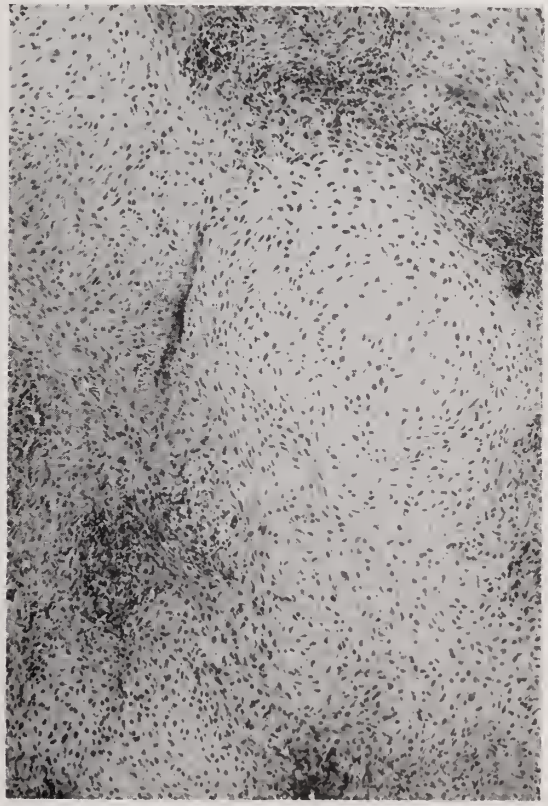

FIG. 4. Biopsy of left ear cartilage showing irregularly thinned, poorly demarcated cartilaginous islands cuffed by dense aggregates of lymphocytes and plasma cells embedded in vascular fibrous tissue.

In October 1967 when the patient developed hot, swollen, tender ears the diagnosis of relapsing polychondritis manifested by the triad of chondritis, episcleritis and arthritis was suggested. The subsequent course of the illness, the recent flare-up with clinical involvement of the trachea, plus the positive biopsy of the ear cartilage have substantiated the clinical impression.

The clinical picture of relapsing polychondritis is characterized by recurrent episodes of chondritis involving cartilages of the external ear and nose. Articular cartilages, primarily in the small joints, are commonly affected, and damage to cartilage in the respiratory tree may result in gradual bronchial obstruction or even acute collapse of the trachea.[14, 15] Involvement of the eye as manifested by conjunctivitis, episcleritis or iritis is frequent, and the inner ear is often involved as well.[16, 17, 18] Our patient has not manifested nasal involvement or hearing loss. This appears to be a disease of the middle decades about equally distributed between the sexes. The overwhelming majority of cases have occurred in Caucasians, the disease having been reported in a Negro only once.[3] Most of the reported causes of death are respiratory, usually necrotizing bronchiolitis, pneumonia, or airway collapse. Because of the potential seriousness of this complication, carticosteroid therapy is the treatment of choice.

Relapsing polychondritis is a disease of unknown etiology and has been reported occasionally in association with the rheumatic and collagen vascular group of disorders such as rheumatoid arthritis, Sjögren's syndrome, lupus erythematosis, scleroderma, and rheumatic myocarditis. The only other case reported in a patient with ulcerative colitis did not show histologic evidence of polychondritis at postmortem examination.[8]

Summary

This report describes a patient with ulcerative colitis who developed auricular, ocular and articular signs consistent with relapsing polychondritis 13 years after the onset of the colitis. In addition, a self-limiting episode of polyarthritis associated with bilateral hilar adenopathy of short duration occurred 8 years after the onset of the colitis. The clinical course has been discussed.

Appreciation is expressed to Mary Jane Matthews, M.D., Chief, Laboratory Division, Veterans Administration Hospital, Washington, D. C., for interpretation of the pathologic specimens.

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Ethylene Glycol Poisoning

Survival after Ingestion of 400 ml. with 42 Days of Oliguria and 17 Days of Coma

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THE TOXICITY OF ETHYLENE GLYCOL (ethane-1:2-diol), an industrial solvent commonly used as an antifreeze agent, has been well documented. Ingestion of relatively small amounts has resulted in death in the majority of cases reported.[1-13] Death may occur during the first few days from neurologic and cardiopulmonary involvement. Patients who survive this period frequently develop acute tubular necrosis and uremia.[12, 14] Treatment of the latter by dialysis was first reported by Schreiner et al[15] in 1959. Since that time several articles have appeared supporting the use of both hemodialysis and peritoneal dialysis in the treatment of this condition.[16, 17]

The present report deals with a patient who was successfully treated with dialysis. Following ingestion of approximately 400 ml. of ethylene glycol he remained comatose for 17 days and oliguric for 42 days. To our knowledge this represents the largest amount of ethylene glycol imbibed with eventual survival, as well as the longest documented period of oliguria.

Report of Case

The patient, a 49-year-old alcoholic male, was admitted conscious to another hospital on September 27, 1966 where he gave a history of having ingested at least 3 cups of antifreeze (approximately 400 ml.). Physical examination at that time was essentially within normal limits except for the odor of alcohol on his breath. His stomach was immediately lavaged, but within 3 hours he began to manifest clinical signs of metabolic acidosis. At that time he was found to have a blood urea nitrogen (BUN) of 19 mg., a blood sugar of 300 mg., and carbon dioxide content of 8 mEq./L. He was immediately treated with insulin and large intravenous doses of sodium bicarbonate. Catheterization of the bladder yielded 750 ml. of urine. On the following day, however, the urinary output had dropped to 20 ml. Since the carbon dioxide content was still 7 mEq./L and his blood gases indicated a severe metabolic acidosis, pH 7.21, pCO_2 14.2, and pO_2 108 mm. Hg, he received additional infusions of bicarbonate. Calcium was also administered intravenously because of hypocalcemia (7.6 mg.) and tetanic spasms. In addition, he was given an infusion of alcohol because of its reported beneficial effect in ethylene glycol poisoning. On the third day following admission the BUN had risen to 58 mg., and in view of the obvious deteriorating renal function the patient was transferred to the Veterans Administration Hospital, Washington, D. C. On admission he was comatose, unresponsive to painful stimuli, and his vital signs were as follows: blood pressure 120/70 mm. Hg, pulse rate 100/min., and temperature 104°F. Auscultation of the chest revealed generalized rales throughout both lungs, and there were bilateral extensor toe reflexes. An ECG was within normal limits, and an X-ray of his chest revealed bilateral bronchopneumonia. An X-ray film of the skull was normal. Initial laboratory values were as follows: Urinalysis revealed a specific gravity of 1.016 with 4+ proteinuria, many white blood cells, bacteria and epithelial cells, as well as many birefringent rod-shaped crystals. The hematocrit was 47 per cent, white blood cells 11,300 with a shift to the left, BUN 60 mg., serum creatinine 10.5 mg., blood sugar 140 mg., Na 130 mEq./L, K 3.1 mEq./L, Cl 78 mEq./L, and carbon dioxide content 37 mEq./L. Blood gas determinations at this time revealed a pH of 7.6, a pO_2 of 42, and a pCO_2 of 38 mm. Hg, representing a metabolic alkalosis thought to be secondary to overcorrection of his metabolic acidosis. Spinal tap revealed a normal opening and closing pressure, with 7 W.B.C.'s, 40 R.B.C.'s, and protein of 60 mg. Liver function tests were essentially within normal limits.

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The patient immediately underwent his first hemodialysis, and during his hospitalization had a total of 9 dialyses—5 peritoneal and 4 hemodialyses. From the time of admission the urine output remained at less than 100 ml. per day, and on several occasions no urine at all was passed. On the fortieth day the urine output increased to 200 ml. and slowly increased further until the forty-second day. On the forty-sixth day the urinary output once again dropped to 100 ml., whence it gradually increased, reaching a peak of 1,700 ml. on the fifty-fifth day. Pertinent clinical data are indicated in figure 1. The clinical course was complicated by coma lasting approximately 17 days, with subsequent slow return of mental faculties to normal. The course was also punctuated by frequent infection of the lungs and urinary tract requiring several courses of antibiotic therapy. The antibiotics employed included Keflin®, chloramphenicol, and Coly-Mycin® with careful blood level monitoring of the last. There was also an episode of hematemesis, the cause of which could not be determined, although it was considered to be due either to a stress ulcer or to uremia. Two renal biopsies were performed (figures 2 and 3), one on the thirty-sixth day after ingestion and the second on the seventy-first day. The first biopsy showed extensive necrosis and flattening of the tubular epithelial cells. These changes were most marked in the proximal tubules. The glomeruli appeared relatively uninvolved, while the interstitium was edematous and contained focal mononuclear cell infiltration. In addition, characteristic sheaves of birefringent crystals were present in the proximal tubules. Although the second biopsy showed epithelial regeneration with improvement of the other abnormalities, intraluminal crystals were still present in profusion. The patient was finally transferred back to the original hospital on the seventy-ninth day, with a BUN of 35 mg. and a creatinine of 2.9 mg. Reëvaluation of the patient 7 months later revealed that he was mentally normal, in good spirits, and indulging in sporting and social activities. The BUN was 28 mg. and the creatinine 1.8 mg.

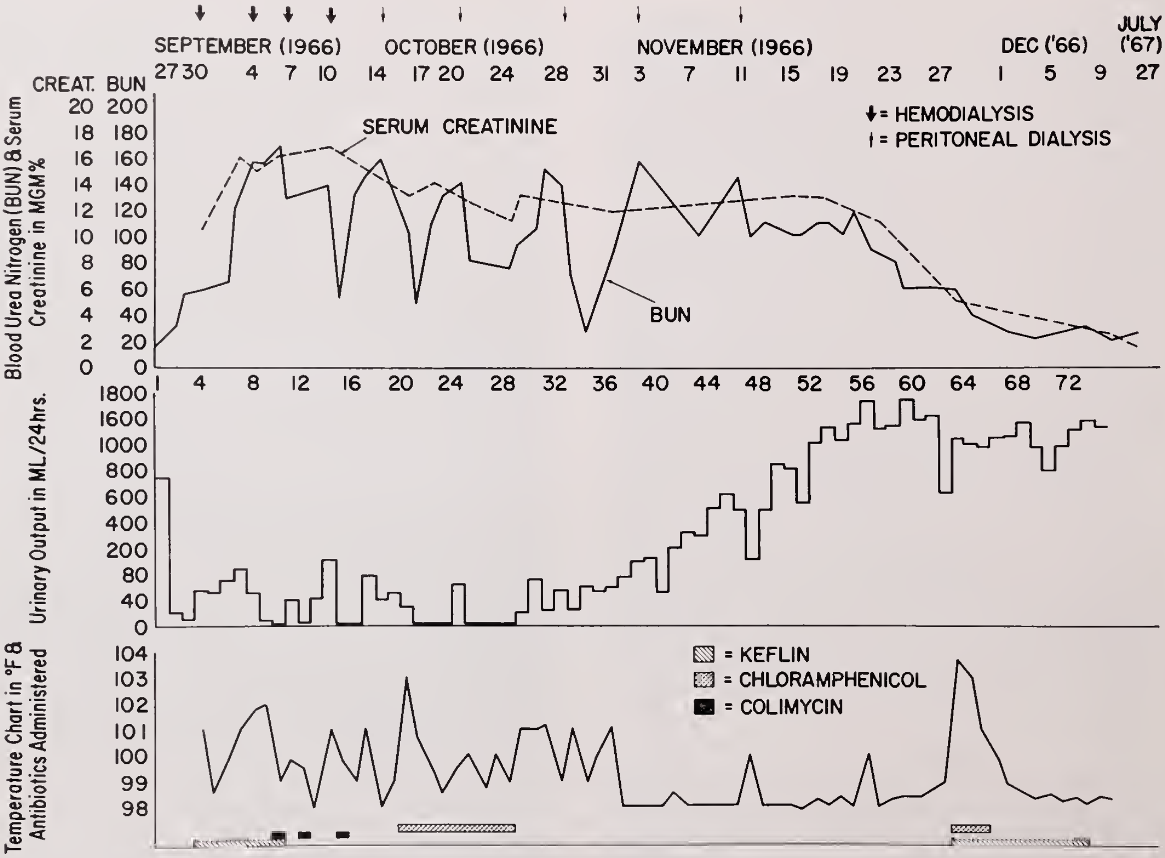


FIG. 1. Graphic representation of patient's course following ingestion of ethylene glycol.

Discussion

Ethylene glycol, a bivalent alcohol with the structural formula, HO–CH_2–CH_2–OH, was synthesized approximately 100 years ago as a substitute for glycerine. Originally considered to be nontoxic,[18, 19] its use as an antifreeze agent and a solvent became widespread because of the shortage of glycerine during World War I. In 1930 the first report of 2 deaths as a result of its use appeared.[1]

The toxicity of the glycols was further emphasized by Geiling and Cannon[20] in 1938, who described a large number of deaths caused by diethylene glycol. Since the report of Hunt[21] in 1932 ingestion of 100 ml. of ethylene glycol has generally been accepted as being a fatal dose. Nevertheless, death has ensued from as little as 60 ml.,[3] and survival from as much as 240 ml.[7] It is obviously impossible to be certain of precisely how much is ingested in any single case. Nevertheless, our patient, who was conscious at the time of admission, emphatically stated that he had imbibed 3 large coffee cups of antifreeze. A conservative estimate of 400 ml. has been made, representing the largest amount imbibed with subsequent survival thus far reported.

Symptoms following ingestion have been noted to occur in 3 phases:

1. Initial involvement of the central nervous system simulating acute ethanol intoxication and developing from within 30 minutes to 12 hours. These include nausea, vomiting, stupor, acidosis, coma and convulsions, frequently culminating in death.

2. Cardiopulmonary involvement within 12 to 24 hours, with tachypnea, cyanosis, pulmonary

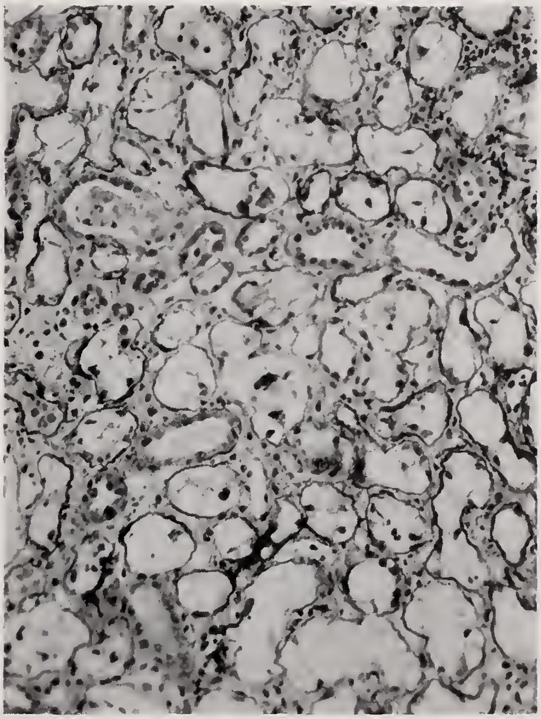


FIG. 2. First biopsy showing extensive vacuolization, degeneration, and necrosis of tubular epithelial cells. Interstitial tissue shows edema and mononuclear-cell infiltration.

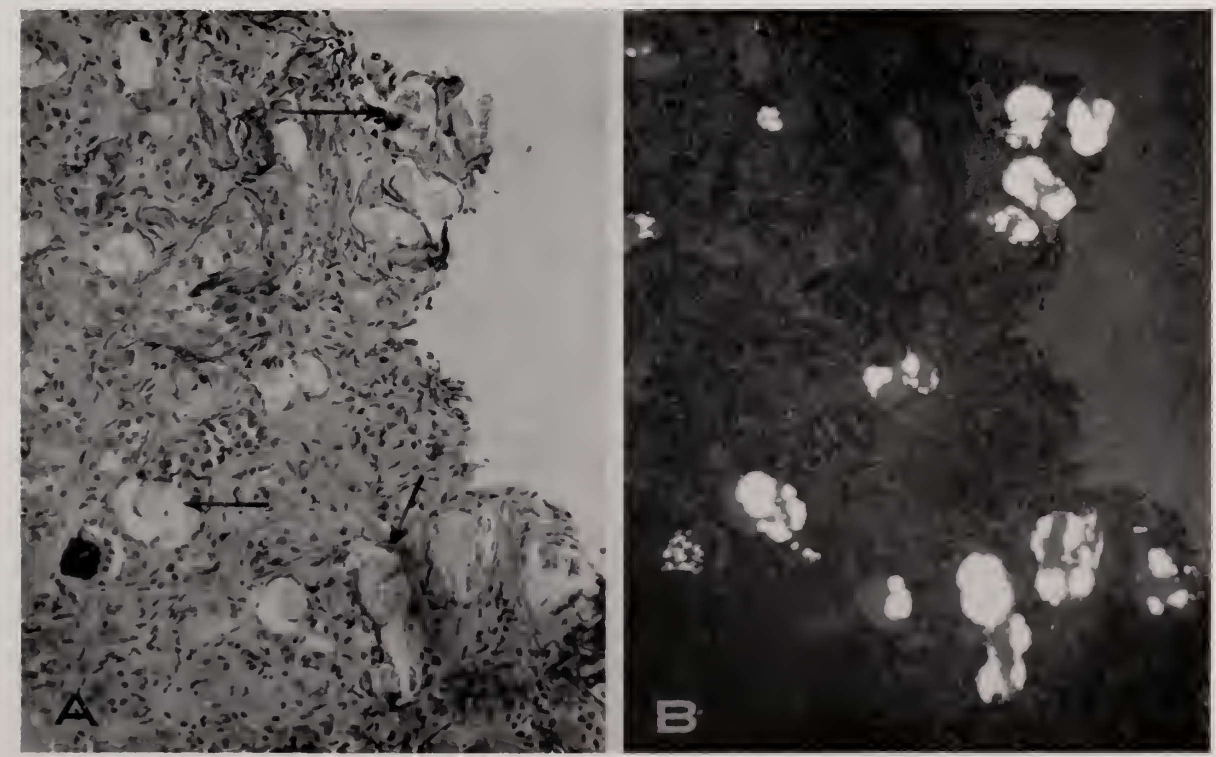


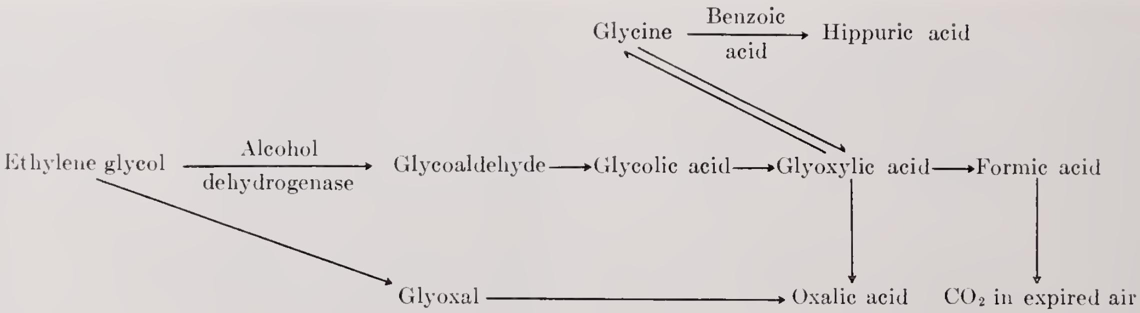
FIG. 3. A. Renal biopsy with sheaves of crystals occluding the lumina of proximal convoluted tubules. There is increased fibrous tissue and mononuclear-cell infiltration in the interstitium. B. Same under polarized light, demonstrating birefringence of crystals.

edema, myocardial dilatation, and death. Most cases of fatality have occurred early after ingestion.

3. Should survival extend beyond the second or third day, however, renal involvement may become manifest with the onset of flank pain, development of tubular necrosis, uremia, and death.[14] The course followed by our patient corresponds closely to this sequence.

The manner in which ethylene glycol produces its toxicity has not been definitely established. There seems little doubt that the metabolic end-product of its oxidation, oxalic acid, plays a direct role in the production of the nephrotoxicity.[17, 21, 22] It has been established that approximately 3 to 10 per cent appears in the urine as oxalic acid,[18] and the presence of large birefringent calcium oxalate crystals in the renal tubules is a common finding.[19] However, the rapidity of onset of neurologic manifestations cannot be ascribed to oxalic acid because it is unlikely that conversion to oxalic acid occurs within 30 minutes. It has been suggested, therefore, that neurologic symptoms may be due to ethylene glycol itself,[12] and it is conceivable that the early acidosis may play a contributory role.[16]

The metabolic pathway, as modified from Gessner et al,[23] is as follows:



The oxidation is catalyzed by alcohol dehydrogenase. Experimentally, it has been shown that ethanol is preferentially oxidized by this enzyme and may therefore provide protection because of competitive inhibition of the enzymatic oxidation of ethylene glycol. Thus, ethanol has been proposed as a form of early therapy.[24]

The exact mechanism of its nephrotoxic effect is in dispute. Whether this is due to oxalic acid per se or to the deposition of calcium oxalate in the renal tubules remains a matter of speculation. Although early consideration was given to the physical effect of the calcium oxalate crystals blocking the renal tubule and thus causing renal insufficiency, most authors feel that the crystals are merely an incidental finding. Both Milles[4] and Grant[25] consider calcium oxalate to be inert and that the toxic effects are produced by oxalic acid itself. For this reason Grant suggested the use of large doses of intravenous calcium to convert the oxalic acid to the relatively inert calcium salt. Levy[12] has postulated that the toxic action of oxalate is due to the fact that it is concentrated in the renal tubule, chelates essential intracellular divalent metals, calcium or magnesium, and thus leads to tubular necrosis. Our patient was given infusions of calcium, primarily on the basis of the tetanic spasms and hypocalcemia, and alcohol shortly after his admission. Neither of these forms of therapy, however, prevented the development of the nephrotoxic lesion.

Recent reports on the successful employment of dialysis are encouraging.[15, 16, 17, 26] The early removal of the circulating alcohol by hemodialysis in the hope of preventing acute tubular necrosis as well as the control of acidosis, which in itself will reduce the mortality,[16] suggests that urgent consideration be given to this form of therapy as soon as possible after ingestion. The prolonged period of uremia in this patient required the use of dialysis on 9 occasions for its control. Following the fourth hemodialysis the patient developed an infection of the A-V shunt, and subsequent dialyses were therefore performed via the peritoneal route. We have not encountered a report in our review of the literature of any patient requiring dialysis for this length of time.

Renal biopsy, as first proposed by Berman et al,[14] constitutes a helpful diagnostic procedure. The finding of large, birefringent calcium oxalate crystals, usually arranged in sheaves, is almost pathognomonic of this form of intoxication. The crystals were noted in the urine and in both renal biopsies in this patient, and it is probable that they will remain indefinitely. The marked improvement of renal function at the time of the second biopsy, despite the presence of crystals in profusion, again suggests that they are probably inert and do not in themselves produce acute renal failure.

The patient's hospital course was punctuated by numerous episodes of pulmonary and urinary-tract infection. Organisms cultured at these times included Pseudomonas, requiring the use of Coly-Mycin. Blood levels of this drug were carefully monitored, and it was thought that no added nephrotoxicity ensued as a result of its use.

Summary

Ethylene glycol is a highly toxic solvent which when taken orally in a sufficiently large dose almost invariably results in death. One hundred ml. is generally considered to be a fatal dose, although survival after imbibing 240 ml. has been reported. If death does not ensue early, tubular necrosis usually develops. Described herein is a 49-year-old man who imbibed approximately 400 ml. of ethylene glycol, shortly became comatose for 17 days, developed biopsy-proven tubular necrosis, and remained oliguric for 42 days. The amount ingested and the duration of coma and oliguria are highly atypical and far exceed any previous reports. Treatment included the use of calcium salts, alcohol infusions, alkalinizing agents, antibiotics, and repeated dialyses. We suggest that dialysis be instituted immediately after the diagnosis and be continued indefinitely if tubular necrosis develops.

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Pulmonary Function in Systemic Sclerosis—Haddad et al

(Continued from page 16)

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ECG in Pulmonary Emphysema—Ishikawa et al

(Continued from page 26)

In 11 per cent of the emphysema group the ECG showed features of posterodiaphragmatic infarcts. This number could be reduced to 5 per cent. Lateral infarcts were simulated by emphysema records in 8 per cent. This number could also be reduced to 5 per cent.

An additional improvement in differentiation by 3 per cent could be accomplished by discriminant function analysis. From the original total of 50 per cent of emphysema records simulating infarct only 13 per cent were left which remained unclassified or questionable.

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Doctors Hospital and Duke University Join in Educational Venture

Doctors Hospital, of Washington, and Duke University Medical Center, Durham, N.C., jointly announced, November 4, the terms of a new educational agreement.

Dr. William G. Anlyan, Vice President of Health Affairs at Duke University, noted that "the agreement will enable our students, faculty and staff to observe a working model of a health care delivery system in a large metropolitan setting—a model which we have not heretofore observed in our relationships." In turn, he said, "it will provide educational opportunities for physicians and staff at Doctors Hospital through the availability of Duke's Educational and Medical Research Program."

Dr. Oscar B. Hunter, Jr., President of Doctors Hospital, stated that under the agreement programs are being developed wherein Duke's medical students may accept clinical assignments on an elective basis.

Dr. Arthur A. Morris, Chief of Neurosurgery, and Dr. Karl C. Jonas, Chairman of the Department of Surgery, Doctors Hospital, working with Dr. Anlyan, of Duke University, have been developing the affiliation over the last 18 months. In a joint statement Drs. Jonas and Morris concluded: "Our affiliation with Duke is set for 3 years, at which time both governing boards will review the agreement and renew only by mutual consent. During these 3 years we shall have the privilege of a close association with an outstanding group of brilliant men, academically accomplished and of superior intellectual capacity but no less dedicated to excellence in clinical medicine than our own best clinicians. It promises to be an exciting and fruitful period. We look forward to its challenge with confidence and anticipation."

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A small fraction of the hormonal agents in oral contraceptive pills has been identified in the milk of mothers receiving these drugs. The long-range effect on the nursing infant cannot be determined at this time.

Indication—Oral contraception.

Contraindications—Thrombophlebitis, thromboembolic disorders, cerebral apoplexy or a past history of these conditions, markedly impaired liver function, known or suspected carcinoma of the breast, known or suspected estrogen-dependent neoplasia, undiagnosed abnormal genital bleeding.

Warnings—Watch for the earliest manifestations of thrombotic disorders (thrombophlebitis, cerebrovascular disorders, pulmonary embolism, retinal thrombosis); if present or suspected discontinue the drug immediately.

British studies reported in April 1968[1,2] estimate there is a seven- to tenfold increase in mortality and morbidity due to thromboembolic diseases in women taking oral contraceptives. In these controlled retrospective studies, involving 36 reported deaths and 58 hospitalizations due to "idiopathic" thromboembolism, statistical evaluation indicated that the differences observed between users and non-users were highly significant. The conclusions reached in the studies are summarized in the table below:

Comparison of Mortality and Hospitalization Rates Due to Thromboembolic Disease in Users and Non-Users of Oral Contraceptives in Britain.

Category	*Mortality Rates*		*Hospitalization Rates (Morbidity)*
	Age 20-34	*Age 35-44*	*Age 20-44*
Users of Oral Contraceptives	1.5/100,000	3.9/100,000	47/100,000
Non-Users	0.2/100,000	0.5/100,000	5/100,000

Ovulen-21 Com
Directions

No comparable studies are yet available in the United States. The British data, especially as they indicate the magnitude of the increased risk to the individual patient, cannot be applied directly to women in other countries in which the incidences of spontaneously occurring thromboembolic disease may differ.

Discontinue medication pending examination if there is sudden partial or complete loss of vision, or sudden onset of proptosis, diplopia or migraine. Withdraw medication if papilledema or retinal vascular lesions are found.

Since the safety of Ovulen in pregnancy has not been demonstrated, it is recommended that pregnancy be ruled out for any patient who has missed two consecutive periods before continuing the contraceptive regimen. If the patient has not adhered to the prescribed schedule the possibility of pregnancy should be considered at the first missed period.

A small fraction of the hormone agents in oral contraceptives has been identified in the milk of mothers receiving these drugs. The long-range effect on the nursing infant cannot be determined at this time.

Precautions—Pretreatment physical examination should include special reference to the breasts and pelvic organs, and a Papanicolaou smear.

Endocrine and possibly liver function tests may be affected by Ovulen. Therefore, it is recommended that such tests if abnormal be repeated after the drug has been withdrawn for two months.

Pre-existing uterine fibromyomas may increase in size under the influence of progestogen-estrogen preparations.

Because these agents may cause some degree of fluid retention, conditions which might be influenced by this factor, such as epilepsy, migraine, asthma, cardiac or renal dysfunction, require careful observation.

In breakthrough bleeding, and all irregular vaginal bleeding, consider nonfunctional causes. Adequate diagnostic measures are indicated in undiagnosed vaginal bleeding.

Carefully observe patients with a history of psychic depression and discontinue the drug if severe depression recurs.

Any possible influence of prolonged Ovulen therapy on pituitary, ovarian, adrenal, hepatic or uterine function awaits further study.

A decrease in glucose tolerance has occurred in a significant percentage of patients on oral contraceptives. The mechanism of this decrease is obscure. For this reason, diabetic patients should be observed carefully while receiving Ovulen.

Because of the effects of estrogens on epiphyseal closure Ovulen should be used judiciously in young patients in whom bone growth is not complete.

The age of the patient constitutes no absolute limiting factor, although Ovulen therapy may mask the onset of the climacteric.

The pathologist should be informed of Ovulen therapy when relevant specimens are submitted.

Adverse Reactions—A statistically significant association has been shown between use of oral contraceptives and the following serious adverse reactions: thrombophlebitis, pulmonary embolism.

Although available evidence is suggestive of an association, such a relationship has been neither confirmed nor refuted for the following serious adverse reactions: cerebrovascular accidents, neuro-ocular lesions, e.g., retinal thrombosis and optic neuritis.

The following adverse reactions are known to occur in patients receiving oral contraceptives: nausea, vomiting, gastrointestinal symptoms (such as abdominal cramps and bloating), breakthrough bleeding, spotting, change in menstrual flow, amenorrhea during and after treatment, edema, chloasma or melasma, breast changes (tenderness, enlargement, secretion), change in weight, changes in cervical erosion and cervical secretions, suppression of lactation when given immediately post partum, cholestatic jaundice, migraine, allergic rash, rise in blood pressure in susceptible individuals, mental depression.

Although the following adverse reactions have been reported in users of oral contraceptives, an association has been neither confirmed nor refuted: anovulation post treatment, premenstrual-like syndrome, changes in libido, changes in appetite, cystitis-like syndrome, headache, nervousness, dizziness, fatigue, backache, hirsutism, loss of scalp hair, erythema multiforme and nodosum, hemorrhagic eruption, itching. The following laboratory results may be altered by oral contraceptives: hepatic function: increased sulfabromophthalein and other tests; coagulation tests: increase in prothrombin, Factors VII, VIII, IX and X; thyroid function: increase in PBI and butanol extractable protein bound iodine, and decrease in T^3 uptake values; metyrapone test; pregnanediol determination.

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President's Page

THE FOCUS OF 1970—SOCIOECONOMIC ASPECTS OF MEDICINE

It is with both pride and some apprehension that I assume the presidency of the Medical Society of the District of Columbia. Pride is aroused by the fact that the selection and election are done by one's peers, and yet there is apprehension lest by year's end my efforts may have failed to contribute to the betterment of the medical profession in this area and, more important, to the improvement of health care.

Not many years ago we were taught the art and science of medical practice. As our technological knowledge increased the science greatly overshadowed the art in the practice of medicine. Today, we add another strong ingredient—the socioeconomic aspects. We must continue to foster the art of medicine—the area that brings out the compassion necessary in everyday practice; to advance the science in order to eradicate the disease process; and to seek to understand and help to resolve the socioeconomic problems which face medicine in the present general social revolution. These problems are and will continue to be a subject for much discussion in the coming year.

I am certain that all physicians are anxious to see that everyone, irrespective of economic status, receives the medical care he needs. The means of dispensing this comprehensive care requires our continuing attention. It becomes obvious that a medical society must deal with all the problems of its members in relation not only to the individuals in a community but to the community as a whole.

As President-elect I was astonished at the amount of work involved in the everyday activities of our Medical Society. Fortunately, we have many physicians interested in the socioeconomic aspects of medicine who are willing to give of their valuable time to study and to help resolve some of these problems.

The response to my request for participation in Medical Society committee work by our members was most gratifying; approximately 40 per cent of the Active members responded. I have attempted to fulfill primary requests as much as possible; however, some committees required only a few replacements and/or additions, making it impossible to grant all requests. To all who responded I extend a most hearty thanks.

The Medical Society must depend, through its president, on the individual member for support, for a study of problems relating to medicine, and for assistance in the resolution of these problems. I look forward to receiving your earnest support.

Frank S. Pellegrini

FRANK S. PELLEGRINI, M.D.

President, The Medical Society of the District of Columbia, 1970

Editorials

Frank Saverio Pellegrini, M.D.

Dr. Frank S. Pellegrini, the 103rd President of the Medical Society of the District of Columbia, a New Yorker by birth, has already made a lasting contribution to the Medical Society. As Chairman of the House and Building Committee from the inception of the idea of a new headquarters for the Medical Society to the completion of the building, he was officially responsible for the fine structure that was completed in 1966 and has proved to be exceptionally functional.

Born in New York City, August 25, 1915, to George and Filomena Pellegrini, Frank attended public schools in Brooklyn with his brother and 2 sisters. He received his Bachelor of Science degree in 1935 from Long Island University.

Dr. Pellegrini has been a resident of the Washington area since the 1930's when he enrolled for the study of medicine at Georgetown University. After receiving his degree in 1939, he spent 2 years in a rotating internship at Providence Hospital.

During World War II, from 1942 to 1946, he served in the Medical Corps of the U.S. Army as a flight surgeon. He was discharged with the commission of Major.

The new President has been active in the affairs of the Medical Society of the District of Columbia since his election to Active membership in 1945. In addition to his dedicated service on the House and Building Committee, he has been a member and chairman of many other committees. He was First Vice President of the Society in 1962, Chairman of the Program Committee for the Annual Scientific Assembly in 1963, and General Chairman of the Assembly in 1964. He represented the Medical Society on the Board of Trustees of Medical Service of the District of Columbia from 1958 to 1967. He has also served on the Finance Committee of Medical Service, on its Executive Committee, and as Chairman of the Advisory Committee.

Dr. Pellegrini has continued his association with Providence Hospital since his internship. He was Chairman of the Department of General Practice from 1950 to 1953. He is one of the founders and Past President of the Providence Hospital Alumni Association.

The need for a hospital in Southeast Washington, long recognized by doctors practicing in that area, was realized with the founding of the Morris Cafritz Memorial Hospital. To this endeavor Dr. Pellegrini gave much of his time and abilities. He was a member of the Founding Committee in 1952, a member of the Board of Trustees for many years, First Vice President in 1963, and the first President of the Medical Staff, serving from 1965 to 1968.

Licensed in both the District of Columbia and Maryland, he is engaged in general practice in offices at 3611 Branch Avenue, Hillcrest Heights, Md. He is a member and Past President of the D. C. Chapter of the American Academy of General Practice.

Dr. Pellegrini has many interests beyond the principal one of medical care. He is Chairman of the Board of Trustees of the Southern Maryland Bank and Trust Company, a founder and Past President of the Oakcrest Country Club, and a member of the Tantallon Golf and Country Club, where he enjoys golf in his limited leisure. His Shangri-la is a beach home at Sussex Shores, Del., just north of Bethany Beach.

He and his wife, the former Gloria Frances Masco, have 3 daughters and 1 grandchild. Patricia Ann, the oldest of the 3, is working toward a Master's degree in molecular biology at the University of West Virginia. Her husband, Louis V. Kaufman, is a senior medical student at the same University. Phyllis Mary, a graduate of Marquette University, is a graduate student in the field of social work at Boston University. The youngest, Barbara Joan, is a sophomore at Notre Dame Academy in Washington, D.C.

The Society is fortunate in having for its new president a man of broad interests, vigorous and personable. The year 1970 promises to be a fruitful one for the Medical Society of the District of Columbia.

The Veterans Administration Medical Program

The Veterans Administration medical program has been functioning in its present form since 1946 when Generals Omar Bradley and Paul Hawley, Dr. Paul Magnuson, and Dr. Edward H. Cushing were the chief architects in developing the so-called Deans Committee system. Despite its importance, this hospital system, the largest in the world, providing a high quality of patient care as well as medical education and medical research, is not always well understood by the medical profession generally. Extensive innovations have occurred during the past few years aimed at improving patient care as well as research and education. Thus it may be worthwhile to review both the background as well as present development and plans.

Drs. Magnuson and Cushing were largely instrumental in emphasizing and demonstrating that research and education inevitably improved the quality of patient care in VA hospitals, as has long been known for any other type of professional institution. Experience has demonstrated unequivocally that the best VA hospital, the place where the sick patient is best treated, is that hospital most closely affiliated with a medical school. For each VA hospital affiliated with a medical school the Chief Medical Director appoints a Deans Committee comprised primarily of the staff of the affiliated institution. A policy of close affiliation means that the Deans Committees, through their concern with education at undergraduate and graduate levels, can exert a profound influence on the quality of patient care and research in VA hospitals. Appreciation of this impact of the Deans Committees on patient care has led to constant efforts to strengthen the relationships. In Washington the VA Hospital enjoys coöperative relationships with all 3 schools, to the benefit of each institution involved.

Educational activities in VA hospitals can be divided into 2 broad categories, namely, education of physicians and training of allied health manpower. The former takes place through undergraduate clinical teaching of medical students, graduate education of interns and residents, and the continuing education of the hospitals' own staffs.*

Allied health manpower training, embracing all varieties of professional and technical skills, can be enormously developed in the VA.† Given sufficient funds, personnel and space, the Veterans Administration could train as many as 75,000 individuals annually. This is a national resource with great potential toward progress in the delivery of medical care.

Medical research in VA hospitals is supported by Congressional appropriation for that purpose to the extent of almost $50,000,000 annually. In addition, individual investigators may receive individual grants, chiefly from NIH, in their roles as faculty members of medical schools. This adds approximately $10,000,000 to the total available research funds.

Formerly, Central Office largely followed the administrative principle of leaving to individual hospitals the sole responsibility for the quality of research. Central Office conceived its role as primarily supportive and interpretive, and sought to direct research only with respect to programs involving interinstitutional coöperation or requiring central administration. This system has recently been modified by the institution of a review process by categorical committees made up half of VA investigators and half of consultants. Most programs or projects are reviewed for initial funding or renewal for periods up to 5 years. The system commenced in 1966 with continued development. Sufficient experience has now accumulated to assure this system as a successful *modus operandi* for evaluation of the quality of VA medical research.

So much for overall Veterans Administration highlights. What about the Washington VA Hospital?

This is a new structure, opened 4 years ago, which evolved from the old Mt. Alto Hospital. It is a 700-bed hospital, with an occupancy rate of over 90 per cent, for medical, surgical, neurologic and psychiatric patients. The staff, chiefly full-time, is of high caliber, most of them holding faculty appointments at one of the 3 medical schools. Some 90 interns and residents are presently receiving clinical training at this Hospital. The medical research program is one of the largest in the VA system, with 53 different programs being carried on; salaries for 140 persons are paid from VA research funds, and 35 additional technicians are paid from other research grants administered by one of the universities with which the Hospital is affiliated.

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* During the past year 4,757 residents and interns, 10,443 medical students, and 425 dental students received some of their training in VA hospitals.

† During the past year 21,553 of such individuals received training in VA hospitals.

It may be useful to speculate over the future role of the VA medical program in the total medical milieu of our society. Although there is no doubt that its facilities are now well used by the veteran group, enlarging as it is because of the present war, experience shows that when hospitals are limited to special groups, whether they be indigents, Indians, maritime workers, veterans or others, inefficiency may creep in through underutilization. Moreover, care of a hospitalized patient is episodic care offering little opportunity for continuity and, more important, little emphasis on preventive medicine. These latter aspects of medical care must and will receive increasing attention as time goes on. The Veterans Administration medical program has evolved greatly in terms of enabling a degree of pre- and posthospital or outpatient care and it is continually studying ways to increase its usefulness to our society. The progressive leadership in VA medicine ensures that it will take a significant role in the development of systems for optimum delivery of medical care to all the people, whatever those systems may turn out to be.

James A. Halsted, M.D.
Associate Chief of Staff for Research and Education, Veterans Administration Hospital, Washington

UCR Service Benefit Plan

Medical Service of the District of Columbia will soon propose a service contract based on "usual" and "customary" or "reasonable" fees. This will provide for full payment for covered services. As applied to the physician's fee, "reasonable" means either that it represents his "usual" charge and does not exceed the "customary" charge in his practice area, or, alternately, when exceeding these guidelines, has been judged "reasonable" by his peers because of unusual circumstances. It means that he may not collect unreasonable charges.

In questionable cases it has been agreed that the decision of the physician's local medical society will be final and binding on both the physician and Medical Service of D. C. Every other rational safeguard has been included to protect the Participating Physician.

Administration will be entirely local. There will be a satisfactory periodic fee adjustment mechanism. "Escape clauses" will permit the physician to resign without a waiting period or release him from accepting any lesser payment as payment in full in the event of carrier default in making payment of the reasonable charge for a covered service.

This UCR approach has the advantage of eliminating the continuing harangue over relative value scales and conversion factors. It would remove the "fixed fee" restriction for laboratory and X-ray services.

The proposed UCR Benefit Plan is not entirely flawless. As many physicians have indicated, there are additional services that should be covered. The National Association of Blue Shield Plans has approved the concept of "comprehensive care," and it seems assured that the scope of services for national accounts will be augmented in the near future.

Medical Service of D. C. lacks a really effective role in negotiations with our principal subscriber group, the Federal employees. We have made some headway, however, in our relationship with this program. In addition to submitting recommendations we shall now have the privilege of reviewing and commenting on FEP proposals made by other Blue Shield Plans prior to negotiations between Blue Shield and the Civil Service Commission, and we shall receive a full report of the negotiations afterward.

Medical Service of D. C. will continue to work toward a satisfactory resolution of these problems, but this should not delay a decision. The proposed plan is equitable to both the physician and his patient. It is difficult to improve on a voluntary proposal under local management with binding local medical society peer review.

We can implement this plan or these principles as they now stand, admittedly somewhat less than perfect, but under our control, or we can decide against the plan, lose control, and in all probability end up with one that is far less satisfactory.

Jack Kleh, M.D.
Chairman of the Board, Medical Service of D.C.

Doctor, after all we've been through together...

abscess
acne
amebiasis
anthrax
bacillary dysentery
bartonellosis
bronchitis
bronchopulmonary infection
brucellosis
chancroid
diphtheria
endocarditis
genitourinary infections
gonorrhea
granuloma inguinale
listeriosis
lymphogranuloma
mixed bacterial infection
osteomyelitis
otitis
pertussis
pharyngitis
pneumonia
psittacosis
pyelonephritis
Rocky Mountain spotted fever
scarlet fever
septicemias
sinusitis
soft tissue infection
tonsillitis
tularemia
typhus fever
urethritis

...don't you think it's time we were on a first-name basis?

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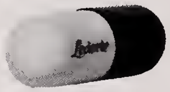

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Contraindications: Hypersensitivity to tetracycline.
Warning: In renal impairment, since liver toxicity is possible, lower doses are indicated; during prolonged therapy consider serum level determinations. Photodynamic reaction to sunlight may occur in hypersensitive persons. Photosensitive individuals should avoid exposure; discontinue treatment if skin discomfort occurs.
Precautions: Nonsusceptible organisms may overgrow; treat superinfection appropriately. Tetracycline may form a stable calcium complex in bone-forming tissue and may cause dental staining during tooth development (last half of pregnancy, neonatal period, infancy, early childhood).
Adverse Reactions: *Gastrointestinal*—anorexia, nausea, vomiting, diarrhea, stomatitis, glossitis, enterocolitis, pruritus ani. *Skin*—maculopapular and erythematous rashes; exfoliative dermatitis; photosensitivity; onycholysis, nail discoloration. *Kidney*—dose-related rise in BUN. *Hypersensitivity reactions*—urticaria, angioneurotic edema, anaphylaxis. *Intracranial*—bulging fontanels in young infants. *Teeth*—yellow-brown staining; enamel hypoplasia. *Blood*—anemia, thrombocytopenic purpura, neutropenia, eosinophilia. *Liver*—cholestasis at high dosage. Upon adverse reaction, stop medication and treat appropriately.

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484-9

Proceedings of the Annual Business Meeting

Dr. Frank S. Bacon, President of the Medical Society of the District of Columbia, called the Annual Business Meeting to order at 8 p.m. on Wednesday, November 19, in the Medical Society's Exhibit Hall. More than 150 members attended the meeting. Present on the platform were Dr. Paul R. Wilner, Chairman of the Executive Board; Dr. Frank S. Pellegrini, President-elect; Dr. Herbert P. Ramsey, parliamentarian; Mrs. Raymond A. Osbourn, President of the Woman's Auxiliary to the Medical Society; and Mr. Thomas Sadler, Secretary.

In Memoriam to Deceased Members

As the first order of business Dr. Bacon asked the members to rise as he read the names of those who had passed away since the last Annual Business Meeting of the Society.

Angevine, Walter K. (Active)—February 25, 1969
Aschenbach, Ernest H. (Active)—October 16, 1969
Beachley, Ralph G. (Associate)—January 25, 1969
Betz, Andrew J. (Active)—February 5, 1969
Brainin, William (Associate)—December 10, 1968
Briggs, Crenshaw D. (Active)—October 5, 1968
Clark, William Earl (Life)—February 28, 1969
Clements, William H. (Associate)—November 3, 1968
Crowley, Jerome F. (Life)—August 10, 1969
Cumming, James G. (Life)—September 1, 1969
Cushing, Edward H. (Life)—November 15, 1969
Damian, Julius D. (Active)—August 13, 1969
DeMayo, John L. (Life)—August 31, 1969
Dorman, Horatio N. (Life)—August 20, 1969
Drew, Frederick D. (Active)—July 12, 1969
Fazekas, Joseph F. (Active)—October 17, 1969
Fletcher, Harry M. (Active)—October 14, 1968
Gibb, William T. (Active)—May 10, 1969
Gill, William T., Jr. (Life)—January 29, 1969
Goldenberg, Carl (Life)—October 1, 1968
Hand, Frank M. (Active)—May 5, 1969
Katzman, Sollie (Active)—November 10, 1969
Kreiselman, Joseph (Life)—October 21, 1968
McCarthy, Lee (Life)—March 16, 1969
Mulligan, John J. (Associate)—April 1, 1969
Murphy, Joseph A. (Life)—January 2, 1969
Naranjit, Guilford E. (Active)—May 17, 1969
Neuman, Lester (Life)—March 25, 1969
Newman, Howard E. (Special)—February 22, 1969
Novick, Joel (Active)—June 2, 1969
Paine, Richmond S. (Active)—May 16, 1969
Pascoe, Sam C. (Active)—May 18, 1969
Passarelli, Arthur F. (Active)—March 27, 1969
Pogue, William G. (Active)—December 28, 1968
Rossbach, Elinor A. (Active)—October 20, 1968
Rout, John W. (Active)—August 30, 1969
Terrell, William D. (Active)—January 13, 1969
Vann, Homer K. (Associate)—June 12, 1969
Werner, Helene G. (Active)—September 15, 1969
White, Charles Stanley (Life)—August 12, 1969

Remarks of the President

Dr. Bacon commented briefly on some of the year's assets and liabilities. He was particularly appreciative to the Woman's Auxiliary for the help it had given him and the Society in many ways. He introduced 3 Student AMA members, representing the 3 medical schools in Washington, who had been invited to attend the Annual Business Meeting. They were: Allan Browne, of George Washington University; John Mikos of Howard University; and Joseph Tepas of Georgetown University.

Some of the difficult problems still to be solved, Dr. Bacon said, concern Medicaid, the transfer of the administration of St. Elizabeths Hospital from NIMH to the D. C. Health Department, the naming of a health officer for D. C., zoning regulations, the abortion law, continuing education, relicensing, the best system of delivering medical care, and how to deliver high-quality medical care to the poor.

Report of the Woman's Auxiliary

Because Mrs. Osbourn, President of the Woman's Auxiliary, found it necessary to leave early, her report was the first one called for. She recounted a number of activities in which the Auxiliary has been involved and noted particularly the sizable contributions that have been made nationally and locally to the AMA Education and Research Foundation.

Report of the Board of Credentials

The Chairman, Dr. Philip R. James, was unable to be present so Dr. Bacon read a portion of this report. The full report appears on page 53.

Report of the Executive Board

The Chairman called upon Dr. Wilner to present the report of the Executive Board (see page 49). He summarized his report, stating that the problems were more socioeconomic than medical.

Dr. Dunn was called to the platform to clarify the proposed changes in the Constitution and By-laws; these changes, which appear in the full report, were adopted as presented.

Dr. Wilner touched upon the duties of the Utilization Committee, public relations activities during the past year, the effectiveness of the Speakers Bureau, legislative activities, the need for a dues increase, the effectiveness of the Washington Regional Medical Program, some plans of the Health Foundation, and the special programs sponsored by the Committee on Medicine and Religion and the Committee on Medical Aspects of Sports.

He moved the renomination of Dr. Jack Kleh and Dr. Philip H. Philbin, both for a term of 3 years, to the Board of Trustees of Medical Service of D. C. The name of Dr. Josephine E. Renshaw was presented for renomination for a 5-year term to the Board of Trustees of Group Hospitalization, Inc. The membership gave its approval to these 3 nominations.

The budget for 1970, as it appears on page 55, was approved.

The report of the Secretary-Treasurer (see page 54) was accepted as presented. It was not read.

On the recommendation of the Board of Credentials, the applications of all new members are approved by the Executive Board, which constitutes a 1-year provisional membership. Voted into full membership at this meeting were 83 Active, 21 Associate, 14 Resident-Intern, and 1 Honorary member, namely, Dr. Alexandre John Ohin, Ambassador to the United States from Togo, a region in West Africa.

Report of the Nominating Committee

Dr. Harvey Ammerman, Chairman of the Nominating Committee, the members of which are selected by mail vote from a slate of 21, presented the following slate of officers for 1970:

President-elect: R. Lomax Wells
First Vice President: Seymour Alpert
Second Vice President: James E. Boland
Member of Executive Board for a 4-year term: Frank S. Bacon
Member of the Board of Credentials for a 3-year term: Eugene A. Clark
Member of the Board of Credentials for a 3-year term: Charles S. Ireland
Member of the Board of Credentials for a 1-year term: William Jaffurs
Delegate to AMA for a 2-year term: John J. Hughes
Alternate Delegate to AMA for a 2-year term: Josephine E. Renshaw

These nominees were submitted on behalf of the entire Nominating Committee, which included, in addition to the Chairman, Drs. Stanford A. Lavine, W. Ross Morris, Wesley M. Oler, Hilbert S. Sabin, Philip P. Steptoe, and Harry Zehner, Jr.

Three nominees were presented from the floor, namely, for President-elect, Dr. Marvin C. Korengold; for First Vice President, Dr. Howard Katzman; and for Alternate Delegate to the AMA for a 2-year term, Dr. Jerome W. Canter. A vote by written ballot was requested and resulted in the election of the following members for the contested offices: Dr. Korengold, President-elect; Dr. Katzman, First Vice President; and Dr. Renshaw, Alternate Delegate to the AMA for a 2-year term.

The other members of the original slate were elected by unanimous ballot.

The Chairman introduced the newly elected officers who were present, asking each one to rise and be recognized. Those present were Drs. Katzman, Boland, Jaffurs, Hughes, and Renshaw.

Officers for the Health Foundation, listed on page 52, were presented and approved with the exception of Dr. Korengold. Because he will be an ex officio member of the Foundation Board, a nomination from the floor was requested. Nominated and approved for membership on the Board was Dr. R. Lomax Wells.

Other Business

Dr. Wilner presented Dr. Bacon with an inscribed gavel as a token of appreciation to the outgoing President for his services to the Medical Society.

Dr. Bacon returned to the podium and introduced the President for 1970, Dr. Pellegrini, who responded that as an observer he had found the past year interesting, informational, and educational, and he faced the coming year with the hope of working with committee members to solve some of the medical problems in the area.

At this point Mr. Mikos, of Howard University, asked to be heard and was invited to the podium. He stated that medical students are ignorant of what the Society is doing and he believed that both the Society and medical seniors in the District of Columbia would benefit if lines of communication were established. He proposed that each of the 3 medical schools be represented in the Society body by SAMA members, with full voting privileges. He cited as precedence the state medical societies of Colorado and Pennsylvania. After he left the podium Dr. Bacon stated that it was the intention of the Executive Board to have student representatives present at committee meetings and that this matter had already been discussed.

(Continued on page 70)

Reports Presented at Annual Business Meeting

November 19, 1969

Report of the Chairman of the Executive Board

It is customary for the Chairman of the Executive Board routinely to express his appreciation for the dedication and work of the Executive Director, his pretty and hard-working staff, and the members of the Board.

My comments are not routine. Mr. Sadler has done an outstanding job. The Executive Board is a completely dedicated group and none has refused a time-consuming appearance before a Congressional or any other committee involved in health care for our community.

This report covers only a few of the numerous Society actions and committee reports. There are many committees, chairmen and members who should be mentioned. They work almost anonymously and all deserve an accolade.

The great issues confronting our Society are identical to those of all state societies—sociopolitical and economic problems plus changes in medical education and health care administration. We physicians, still trying to maintain a desirable physician-patient ratio in order to deliver the best health care to our community, are caught in a vast explosive population. Our problems are more sociological and economic than medical, but a health care crisis may be imminent.

I must add one other observation. There has never in my memory been a more hard-working or dedicated President than Dr. Frank Bacon.

Proposed Amendments to the Constitution and By-laws

Grateful acknowledgment is made to Dr. W. LeRoy Dunn and his Committee on Constitution and By-laws.

Presented at this time are the following proposed amendments to the Constitution and By-laws.

1. Repeal Chapter X which now reads:

"Article I. Members may organize Sections composed of any specialty group recognized by the Classification Committee. A request to create a new Section shall be presented to the Council on Specialty Sections. A proposed Section shall initiate its organization by adopting by-laws, and electing officers subject to the Constitution and By-laws of the Society. After due study, the Council shall submit its recommendations to the Executive Board.

"Each Section shall be governed by its Active, Life, and Special members. Associate members of the Society may be members of a Section and may, at the pleasure of the Section, vote and hold office. Any Active, Life, or Special member who is qualified in the specialty which the Section represents may be a member of the Section provided he conforms to the rules and regulations of the Section.

"Any member of the Society not qualified to join a Section shall be privileged to attend the meetings of any Section but without active participation unless invited to do so by the Chairman of the Section.

"A Section may not speak for the Society nor commit the Society to an expense or course of action unless specifically authorized to do so either by the Executive Board or the Society. Each Section shall submit an annual report of its proceedings to the Executive Board.

"Whenever the Council on Specialty Sections determines the need for a Section no longer exists, it shall recommend to the Executive Board that such Section be abolished."

and substitute the following:

"Article I. Members may organize Sections composed of any specialty group recognized by the Classification Committee. A request to create a new Section shall be presented to the Executive Board. A proposed Section shall initiate its organization by adopting by-laws and electing officers subject to the Constitution and By-laws of the Society. The Executive Board shall make its recommendations to the Society.

"Each Section shall be governed by its Active, Life, and Special members. Associate members of the Society may be members of a Section and may, at the pleasure of the Section, vote and hold office. Any Active, Life, or Special member who is qualified in the specialty which the Section represents may be a member of the Section provided he conforms to the rules and regulations of the Section.

"Any member of the Society not qualified to join a Section shall be privileged to attend the meetings of any Section but without active participation unless invited to do so by the Chairman of the Section.

"A Section may not speak for the Society nor commit the Society to any expense or course of action unless specifically authorized to do so either by the Executive Board or the Society. Each Section shall submit an annual report of its proceedings to the Executive Board.

"Whenever the Executive Board determines the need for a Section no longer exists, it shall recommend that such Section be abolished."

2. Amend Chapter IX, Article IV, Section 1, paragraph 4, which now reads:

"If any competent authority charges a member with a felony or crime involving moral turpitude, the Grievance Committee, after studying the case, may recom-

> mend to the Executive Board the suspension, without prejudice, of any or all of the member's privileges until such charges have been disposed of. If the accused is convicted, the Grievance Committee shall reconsider the case and make its recommendation to the Executive Board. In the case of an officer or elective member of the Executive Board, dismissal from the office held and disbarment from future holding of elective or appointive office in the Society may be considered as penalties."

to read:

> "If any competent civil authority charges a member of the Society with a felony or crime involving moral turpitude the Grievance Committee after studying the case may recommend to the Executive Board appropriate action until such charges have been disposed of. If the accused is convicted, the Grievance Committee shall reconsider the case and make its recommendation to the Executive Board."

Utilization Committee

The following statement was adopted by the AMA House of Delegates during its July, 1969 meeting:

> "The Council on Medical Service knows of no greater challenge facing the profession today than to secure universal acceptance and application of the (peer) review concept as the most meaningful method for creating a public awareness of medicine's efforts to assure a high quality of health services at a reasonable cost."

Our Medical Society has accepted this challenge and moved forward in the direction of expanded and effective local peer review mechanisms. Concurring in the recommendation of President Frank Bacon the Executive Board approved the change of name of the Hospital Utilization Committee to Utilization Committee. The Utilization Committee has been charged with review and advice on all utilization problems. It will review and render advice on all individual cases where the administrators of local Medicaid, Medicare and all health insurance plans have a reason to question the need, extent, type and frequency of service rendered by a physician in the care of a patient. Upon request the Committee will review and give an advisory opinion on all questions of utilization of a physician's service rendered outside of a hospital, extended care facility, or nursing home. The Utilization Committee will also consider and advise on any case that an institution's utilization committee does not handle in a manner satisfactory to the administrators of all health insurance agencies or the physician involved.

Public Relations

The Society's rapport with the news media is increasingly favorable. We are continually consulted by the news media when important national figures are in the news because of illness or for background information when the need arises (i.e., when the Metropolitan Police Department began to use Mace, etc.).

Coverage by the news media of the events carried on by the Society is good and is continually improving. In our lobby now is a montage of news stories prepared and released by our public relations consultant, Mr. Lou Brott.

Members have appeared on approximately 75 radio and television shows, and members of our Speakers Bureau have made over 100 talks, as detailed elsewhere in this report.

Our "Health I.Q." radio program, now in its fourth year, is heard every Sunday evening at 8:30 on WRC radio.

A column appears weekly in the *Washington Daily News* under the Society's auspices.

So, we are pleased to report that our public relations activities both internal and external are moving along at an excellent pace, due to the tireless efforts of Dr. Warren D. Brill and his Committee on Public Information and Education.

Speakers Bureau

Under the chairmanship of Dr. Myer H. Stolar, the Speakers Bureau has arranged over 100 speaking engagements by physicians this year at local schools and service organizations. In addition, Mr. Lou Brott, the Society's public relations consultant, has worked closely with this Bureau to arrange approximately 75 television and radio engagements where physicians speak on current medical topics or participate in panel discussions.

Current interest in drug abuse and sex education has brought many requests for knowledgeable speakers on these topics. Other widely requested topics include obesity, geriatrics, and organ transplants. Many of the speaking engagements were at luncheon and dinner meetings. Many favorable comments have come from both physicians who have participated in the program and from the various organizations and institutions which have invited them to speak.

If any member would like to participate in the Speakers Bureau program, contact the Medical Society's office; it would be most appreciated.

Legislative Activities

This has been a year of very heavy activity on the legislative front. Congressional activity on medical matters reached a new peak. Throughout the year we have busily engaged ourselves in supporting or opposing specific legislation, whichever was indicated to be in the best interests of medicine, and the submission of our own proposed legislation.

To date we have been successful, as we were over the past several sessions of Congress, in having eliminated from the D.C. tax program the tax proposals which would levy taxes on nonresident physicians and would levy taxes on the expenditures of nonprofit corporations in the District.

Our representatives have testified in opposition to optometric legislation as not being in the public interest. Such legislation would restrict operations of all doctors of medicine and would have authorized optometrists to perform medical services which they are not qualified to do by their training and experience. We are optimistic that we shall be able to prevent the present optometric bill from being enacted into law.

Medical Society opposition was expressed on the bill sought by the American Psychological Association for the licensing of psychologists in the District. We opposed the licensing of psychologists to engage in therapeutic psychology unless such therapeutic process was ordered by a doctor of medicine. Again, we are hopeful that our opposition will prove successful.

We at present await Congressional action on our proposed amendments to the Healing Arts Practice Act. These amendments would provide for

1. Changing the organizational structure of the Licensure Commission so as to have doctors of medicine and osteopathy as the main components;
2. Establishing licensure by endorsement; and
3. Granting temporary licensure to residents.

Also pending is our request for passage of legislation which would authorize the transfer of unlicensed blood components by licensed blood banks in D.C.

Prompted by this increasingly voluminous amount of legislative activity that affects the practice of medicine, the Medical Society has recently established a Legislative Committee, to be chaired by Dr. Herbert M. Giffin. It will be the responsibility of this Committee to be on the alert for all such legislation, to report it, to advise the Society, through the Executive Board, of its meaning, and to recommend a course of action. This Committee will concern itself with legislation proposed not only locally but Federally. It will also review all proposed legislation and changes in D.C. and Federal government regulations referred to it by other Society committees.

The Legislative Committee will maintain a list of physicians, or suggest physicians, who would be best able to present Society views to committees of Congress, the D.C. Government, and Federal agencies on all legislation or regulations proposed for action from any source.

It is anticipated that this will be a very busy and very effective committee. Already it has been charged with the responsibility of studying and submitting recommendations on many topics, such as the incorporation of physicians and proposed changes in abortion laws.

We are very optimistic that the Legislative Committee will be an effective tool in moving forward with speed and success in our handling of any legislation that is medically oriented, whether local or Federal.

Dues Increase

Consideration was given to the recommendation that membership dues be increased $10.00 per member for the purpose of holding a dinner in conjunction with the Annual Business Meeting. Consideration was also given to the recommendation that dues be increased $15.00 per member and that this increase be earmarked for expenses in connection with the Scientific Assembly.

These proposals were discussed by the Finance Committee and by the Executive Board. Final action on these proposals has been postponed to a later date.

Ballots for Nominating Committee

Our Constitution and By-laws provides that the ballots for the election of the Nominating Committee be counted by tellers appointed by the President. He appointed the following: Drs. John F. J. Clark, Thomas E. Curtin, Donald H. Glew, Arthur G. Kreischer, Charles D. Lenhoff, and Allen M. Mondzac.

We gratefully acknowledge the assistance given by these members in carrying out one of the more important tasks necessary for the functioning of the Medical Society. The results of their tallying and the names of the elected Nominating Committee appear on page 48.

Metropolitan Washington Regional Medical Program

During the period October 1, 1968 to October 1, 1969 the Metropolitan Washington Regional Medical Program has sponsored significant programs, complying with the objectives of P. L. 89-239 in furthering improved patient care in the areas of heart, stroke, cancer, and related diseases in the Metropolitan Washington area. Total recommended funding for the 12 programs has amounted to $1,322,213. In addition to these categorically-oriented clinical programs, several educational programs were directed toward the training of paramedical personnel whose services are required to implement new techniques in medical care and for which no training programs currently exist in conventional curricula. One of the most far-reaching programs, involving physicians of all of the geographic elements of the region, has been the implementation of a program for continuing medical education. In addition to these programs implemented during this period of time, the 3 operational programs implemented in the preceding year have progressed satisfactorily into their second year.

Unfortunately, budgetary limitations at the Federal level have precluded the funding of programs which had been approved at all levels of review and were recommended for implementation. The approved unfunded programs represent a total of $609,994 for the first year. Though this funding deficit, if it continues, will serve as a deterrent to the interest of the medical community in Regional Medical Programs, such a backlog of unfunded programs from a relatively small region reflects a commendable and appropriate response to the objectives of the legislation from members of the medical and allied health professions in the region. In the structuring of the Metropolitan Washington Regional Medical Programs, cognizance has been taken of the importance of the delivery of health care to all segments of the population, and, hopefully, the Metropolitan Washington Regional Medical Program can continue to work with and enhance the effectiveness of other Metropolitan Washington programs directed toward the delivery of health care to the poor.

Our Medical Society, grantee of the Metropolitan Washington Regional Medical Program, commends Dr. Arthur E. Wentz for the excellence of his performance as Program Coördinator.

Health Foundation of D.C.

The By-laws of this Foundation (a nonprofit, charitable organization to which donations are tax-deductible) provide that the 11 Board of Directors be named by the Medical Society. The Board must include the Medical Society's President, President-elect, and Secretary-Treasurer plus 3 additional members of the Medical Society and 5 additional members, including a dentist, a pharmacist, and a registered nurse. It is recommended that the following be approved as members of the Health Foundation's Board of Directors for 1 year beginning January 1, 1970:

Frank S. Pellegrini, M.D. (Society President)
Society's President-elect for 1970
Thomas Sadler (Society Secretary-Treasurer)
Wilfred Dudley, D.D.S.
John R. McHugh, Pharmacist
Grace Mathews, R.N.
Roland B. Scott, M.D.
Marvin C. Korengold, M.D.
Edward W. Nicklas, M.D.
Renah Camalier
Mrs. Jane Yates

It should be noted that the Health Foundation's Board of Directors has approved the application for a grant to stimulate interest and education in the public health fields. The approved application seeks funds for the purpose of setting up an award to be given to a student in each of the 3 medical schools who shows the greatest interest in public health and community health activities.

The Health Foundation in the past year has given financial support to a 4-day helicopter ambulance demonstration and to the free testing program, which was the Society's major project during Community Health Week.

Additional contributions to the Health Foundation would make possible the undertaking of a major project in the community. Contributions from our members would be most welcome, and any recommendations for the Foundation's sponsorship of projects would be entertained.

Medicine and Religion

Under the guidance of its Chairman, Dr. Elizabeth S. Kahler, the Committee on Medicine and Religion (formerly the Committee on Liaison with the Clergy) sponsored the Davidson Lecture in the spring. The lecturer was Dr. Joseph T. English, Administrator of the Health Services and Mental Health Administration, Office of

Economic Opportunity. The Davidson Lecture is a memorial to Dr. Edward Y. Davidson, who was active in the affairs of the Medical Society from his acceptance into membership in 1906. He served as the Society's President in 1916. His initiative and guidance were responsible for the successful erection of the Society's first "home building" at 1718 M Street, N.W.

In the fall the Committee on Medicine and Religion conducted a symposium in which students from seminaries in the surrounding area participated.

Medical Aspects of Sports

In April the Committee on Medical Aspects of Sports sponsored the first Physical Fitness Seminar. This meeting, open to the public, was very successful in content and presentation as well as attendance. Dr. Stanford A. Lavine, Chairman, and members of his Committee prepared a program on the theme, "Exercise: Good or Bad?" Dr. Charles A. Hufnagel served as moderator; presentations were made by Dr. Richard L. Bohannon, Dr. Samuel M. Fox III, Dr. Acors W. Thompson, and Dr. Peter A. Steincrohn. More than 200 persons attended the seminar.

The success of this first physical fitness program prompted the Executive Board to accept the recommendation of the Committee on Medical Aspects of Sports to hold a yearly physical fitness seminar.

Other Nominations

Board of Trustees of Medical Service of D.C.: Each year the President, with approval of the Executive Board, makes nominations to the Board of Trustees of Medical Service of D. C. The terms of 2 members expire in the spring of 1970. It is, therefore, recommended that Dr. Jack Kleh and Dr. Philip H. Philbin be renominated for a term of 3 years each. These nominations, if approved, will be presented at the Annual Business Meeting of Medical Service of D.C. Other Society representatives on its Board include Drs. Charles E. Bickham, Edward W. Nicklas, John A. Kenney, Jr., Howard A. Donald, and Russell M. Tilley, Jr.

Board of Trustees of Group Hospitalization, Inc.: Each year the President, with the approval of the Executive Board, nominates a representative to fill the vacancy of the member whose term expires in the spring of the following year. It is, therefore, recommended that Dr. Josephine E. Renshaw be renominated for a 5-year term. This nomination becomes final, if approved, at the Annual Business Meeting of GHI.

Paul R. Wilner, M.D.
Chairman, Executive Board

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Report of the Board of Credentials

Since the last Annual Business Meeting, November 13, 1968, this Board has interviewed 120 applicants for membership. Again in the past year the preponderance of new members were in the specialties. A considerable number were born abroad, where they had their college and medical school education, with much of their postgraduate training in the United States. The professional qualifications and caliber of our applicants during the past year have remained of the highest degree.

Membership figures now show 1,651 Active, 117 Life, 31 Special, 679 Associate, 34 Resident-Intern, 35 Honorary, or a total of 2,547. Following are the comparative membership figures for 1961 through 1969:

Year	*Active Members*	*Total Members*
1969	1,651	2,547
1968	1,640	2,497
1967	1,595	2,440
1966	1,555	2,444
1965	1,518	2,421
1964	1,535	2,313
1963	1,532	2,275
1962	1,505	2,260
1961	1,485	2,233

Philip R. James, M.D., *Chairman*
Edwin P. Parker III, M.D., *Vice Chairman*
Edward E. Ferguson, M.D.
Eugene A. Clark, M.D.
Seymour Alpert, M.D.
C. Edwin McNamara, M.D.

Report of the Secretary-Treasurer

INCREASE IN VOLUME is again the keynote for headquarters activity. With an estimated projection for November and December, a total of 663 meetings were held at Society headquarters in 1969. This represents a heavy increase over 1968. There was an upsurge in committee meetings, meetings and conferences jointly sponsored by the Society with allied or related health groups, and Section meetings.

Many special events were held in our headquarters: The Davidson Lecture; the first Seminar on Physical Fitness; multiphasic testing programs in conjunction with Community Health Week; special workshops for Regional Medical Program; orientation and training sessions for physician (and staff) Medicaid participants; Community Hospital Emergency Services Forum; seminars on "Health Care for the Aged"—these are but a few.

There is every reason to believe that activity will continue unabated in 1970. We'll be prepared.

Medical Bureau

Telephone usage has drastically increased in the last decade, with emphasis on the last 12 months. Physician and patient dependability upon the telephone for communication continues to become more common and has bred new complexities and compounded the old.

In 1969 the MEDICAL BUREAU will receive and dispatch well over ONE MILLION messages. However, only 1 telephone call out of every 3 calls received requires a message. Realistically, the MEDICAL BUREAU completes more than THREE MILLION calls a year for 870 physicians.

The MEDICAL BUREAU employs 48 operators and 1 Chief Operator. In addition, there are 16 operators, part-time, to assist during peak loads. Turnover among employees continues, primarily influenced by economics governing the salary schedule. Private economy within large industry makes it extremely difficult for the BUREAU to remain competitive to potential and present employees.

In an effort to further improve present service the addition of more switchboards is a necessity. The approximate yearly operational cost for 1 switchboard is $10,000.00. For 1970 the BUREAU will require a minimum of $25,000.00 in additional income to provide service to subscribers. All related operational costs are directly influenced by the trends of local and national economy.

Efficiency and quality of the service are not the sole responsibility of the employees and supervisors. Subscriber usage of the service also affects efficiency and quality. Therefore, periodic reminders on how to use the MEDICAL BUREAU to the best advantage will accompany routine mail to subscribers.

Medical Annals

The MEDICAL ANNALS has maintained its high quality as a state medical journal and has received commendation from many sources. The ANNALS is more fortunate than many state journals because it has a rich source of scientific material in the 3 medical schools and many Federal institutions in the Washington Metropolitan Area. Three special issues have been published this year, with scientific material supplied by the National Institutes of Health, the District of Columbia Health Department, and the Armed Forces Institute of Pathology. November features Doctors Hospital, and papers have already been received by the Editor, Dr. Wallace M. Yater, for the Veterans Hospital Number scheduled for January 1970.

Louise Eckburg, the Executive Editor, and I attended the State Medical Journal Conference which was held in Chicago, September 15 and 16. The consensus seemed to be that a publication is costly but a good investment. This meeting of minds is held biennially to consider new ideas in content and format, economies which may be effected, and mutual problems that have to be faced. This year the tax on advertising revenue and tightened postal regulations received much attention. Our Chicago Office will keep us informed on these developments which are affecting not only the state journals but all medical journals costwise. It may even be to our fiscal advantage to relinquish the favorable postage rate we enjoy presently, pay the higher rate, and increase our circulation, which would give us the basis for higher advertising rates.

Society Finances

Following this report is a summary of the proposed budget for 1970. Anticipated net income over expenses will approximate $15,000.00. But we should bear in mind that reserves for depreciation must be set aside, so we shall indeed be fortunate to "break even." This should not be too surprising when the following is excerpted from the 1966 Annual Report: ". . . It may well be necessary to recommend to the Executive Board that the dues of Active members be increased to provide funds. . . ."

In spite of the steadily ascending costs of office operations, building maintenance, and increased Society activity, dues for Active members remain unchanged since 1964. The Society should seek to build its reserves, not reduce them to cover any losses. The continually upward trend of all expense items cannot continue to be equalized by an unchanged major source of income—membership dues. Something has to give. Recommendation for dues increase will be submitted by the Secretary-Treasurer only after every effort has been made to forestall it. This contemplation of a dues increase does not stem from pessimism but from sheer realism.

THOMAS SADLER
Secretary-Treasurer

Proposed Budget 1970

I. GENERAL FUND INCOME		
A. Dues		
1. Active	$137,000.00	
2. Associate	20,500.00	
3. Other	800.00	$158,300.00
B. Other Income		
1. Scientific Assembly	$20,000.00	
2. Interest on Savings	7,800.00	
3. Indirect Cost—Regional Medical Program	50,000.00	
4. Miscellaneous	2,600.00	80,400.00
TOTAL GENERAL FUND INCOME		$238,700.00
C. Reimbursables		
1. Cancer Morbidity Review	$9,700.00	
2. AMA Dues	82,500.00	
3. Blue Cross/Blue Shield	345,000.00	
4. Member and Agency Services	8,700.00	
TOTAL REIMBURSABLE INCOME		$445,900.00
II. GENERAL FUND EXPENSES		
A. Society Programs		
1. Medical Annals subsidy	$15,000.00	
2. Scientific Assembly	24,000.00	
3. Committee Activities	2,500.00	
4. Out-of-town Meetings	4,000.00	
5. Public relations	6,500.00	
6. Dues to organizations	500.00	
7. Awards and grants	500.00	
8. Membership luncheons	2,000.00	
9. Committee luncheons	3,000.00	
10. Publications	1,500.00	
11. *Newsletter*	3,000.00	
12. Special projects	2,000.00	
13. Meeting room space	20,000.00	$84,500.00
B. Office Staffing		
1. Salaries	$80,000.00	
2. Legal Counsel and Audit	8,000.00	
3. Retirement, Insurance and Taxes	8,300.00	
4. Secretary and Staff expenses	1,000.00	97,300.00
C. Office Operation		
1. Postage, supplies and equipment	$18,500.00	
2. Telephone and Telegraph	5,000.00	
3. Office space	15,000.00	38,500.00
TOTAL GENERAL FUND EXPENSES		$220,300.00
TOTAL GENERAL FUND INCOME		238,700.00
EXCESS INCOME OVER EXPENSES		$18,400.00

D. Reimbursables		
1. Cancer Morbidity Review	$9,700.00	
2. AMA Dues	82,500.00	
3. Blue Cross/Blue Shield	345,000.00	
4. Member and Agency services	5,585.00	
TOTAL REIMBURSABLE EXPENSES		$442,785.00
TOTAL REIMBURSABLE INCOME		445,900.00
EXCESS INCOME OVER EXPENSES		$3,115.00

III. Medical Annals

A. Income		
1. Advertising and subscriptions	$45,000.00	
2. Subsidy from General Fund	15,000.00	
3. Miscellaneous	50.00	$60,050.00
B. Expenses		
1. Salaries and honorarium	$21,000.00	
2. Retirement, Insurance and Taxes	1,000.00	
3. Printing and engravings	45,000.00	
4. Supplies and postage	1,500.00	
5. Miscellaneous	500.00	69,000.00
EXCESS OF INCOME OVER EXPENSES		($8,950.00)

IV. Medical Bureau

A. Income		
1. Alternate Listing Service	$59,312.00	
2. Telephone Secretarial Service	179,504.00	$238,816.00
B. Expenses		
1. Administrative Salaries	$8,000.00	
2. Operators' Salaries	180,000.00	
3. Retirement, Insurance and Taxes	14,200.00	
4. Telephone and Directory	26,000.00	
5. Equipment, supplies and postage	1,300.00	
6. Bureau space	5,000.00	
7. Miscellaneous	500.00	
8. Billing Service	1,400.00	236,400.00
EXCESS INCOME OVER EXPENSES		$2,416.00
NET INCOME FROM ALL OPERATIONS		$14,981.00

V. Building Fund

A. Income		
1. Office Space:		
General Fund	$35,000.00	
Medical Bureau	5,000.00	
Leased	31,065.00	
Meeting Room Rentals	4,000.00	
2. Interest and Dividends	2,700.00	
3. Other	1,170.00	$78,935.00
B. Expenses		
1. Wages	$8,000.00	
2. Contract Service	11,000.00	
3. Fuel	3,500.00	
4. Guard Service	2,400.00	
5. Interest on Mortgage	12,218.00	
6. Mortgage Payment	25,000.00	
7. Insurance	2,000.00	
8. Insurance and Payroll Taxes	600.00	
9. Supplies and repairs	2,500.00	
10. Utilities	11,500.00	
11. Miscellaneous	50.00	78,768.00
NET INCOME OVER EXPENSES		$167.00

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Warnings: Administer cautiously to patients who have previously exhibited a hypersensitivity reaction (e.g., blood dyscrasias, jaundice) to phenothiazines. Phenothiazines are capable of potentiating central nervous system depressants (e.g., anesthetics, opiates, alcohol, etc.) as well as atropine and phosphorus insecticides. During pregnancy, administer only when necessary.

Precautions: There have been infrequent reports of leukopenia and/or agranulocytosis and convulsive seizures. In epileptic patients, anticonvulsant medication should also be maintained. Pigmentary retinopathy may be avoided by remaining within the recommended limits of dosage. Administer cautiously to patients participating in activities requiring complete mental alertness (e.g., driving). Orthostatic hypotension is more common in females than in males. Do not use epinephrine in treating drug-induced hypotension. Daily doses in excess of 300 mg. should be used only in severe neuropsychiatric conditions.

Adverse Reactions: *Central Nervous System*—Drowsiness, especially with large doses, early in treatment; infrequently, pseudoparkinsonism and other extrapyramidal symptoms; nocturnal confusion, hyperactivity, lethargy, psychotic reactions, restlessness, and headache. *Autonomic Nervous System*—Dryness of mouth, blurred vision, constipation, nausea, vomiting, diarrhea, nasal stuffiness, and pallor. *Endocrine System*—Galactorrhea, breast engorgement, amenorrhea, inhibition of ejaculation, and peripheral edema. *Skin*—Dermatitis and skin eruptions of the urticarial type, photosensitivity. *Cardiovascular System*—Changes in the terminal portion of the electrocardiogram have been observed in some patients receiving the phenothiazine tranquilizers, including Mellaril (thioridazine). While there is no evidence at present that these changes are in any way precursors of any significant disturbance of cardiac rhythm, several sudden and unexpected deaths apparently due to cardiac arrest have occurred in patients previously showing electrocardiographic changes. The use of periodic electrocardiograms has been proposed but would appear to be of questionable value as a predictive device. *Other*—A single case described as parotid swelling.

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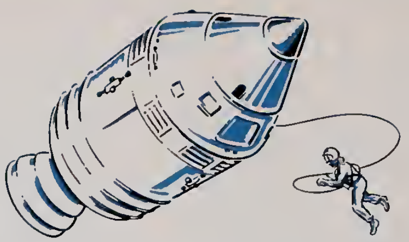

Man in space, now fait accompli, re-emphasizes the importance of Uro-Phosphate therapy. Research into the effect of space travel on the astronaut reveals that weightlessness causes loss of bone calcium. As the bones are required to bear less and less of the weight of the body they lose calcium, increasing the calcium content of the urine. When physical activity is reduced, the acidity of the urine should be adjusted to keep increased calcium in solution . . . . a prophylaxis to prevent kidney or bladder calculi.

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Uro-Phosphate is safe for continuous use. There are no contra-indications other than acidosis. It can be given in sufficient amount to keep the urine clear, acid and sterile. A heavy sugar coating protects its potency.

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HEALTH DEPARTMENT NOTES

Smoking and Health in the District of Columbia

On the sixth anniversary of the Surgeon General's Report on Smoking and Health it would be well for us to note how the District of Columbia is progressing with its program on smoking and health.

Through the Inter-Agency Council on Smoking and other local related voluntary and governmental agencies a "No Smoking Week" program was held the week of January 11–17.

A wide variety of meetings, panels, and forums for physicians, dentists, nurses, health professionals, lay adults and youth were conducted during the week. U.S. Senator Frank E. Moss (Utah Democrat) was honored and presented an award as "the person who had done the most for the public good regarding the smoking and health hazard." Movie star Tony Curtis, volunteer in the "No Smoking Campaign," was toastmaster at an Awards Luncheon, January 13, at the Mayflower Hotel.

The D.C. Inter-Agency Council on Smoking is made up of the D.C. Department of Public Health, the Medical Society of the District of Columbia, American Cancer Society, D.C. Division, Inc., D.C. Dental Society, D.C. League for Nursing, D.C. Public Health Association, D.C. Public Schools, D.C. Tuberculosis and Respiratory Association, the Washington Heart Association, and other agencies.

The Council has been active for several years. It inaugurated a program in the District's schools to encourage smoking education in the fifth and sixth grades.

The Council also made specific recommendations for the control of cigarette smoking, and many senators and congressmen have noted their interest in this information. The President of the United States has replied favorably to the anti-smoking program.

Leadership conferences for high school students, a pilot smoking withdrawal clinic, and withdrawal programs have been conducted by the Council, with favorable results. It also conducted a smoking survey among area physicians and dentists. Facts from the survey produced some interesting statistics.

Drug Abuse—Manifestations of the Depressant Abuser*

(Barbiturates—"Goofballs")

1. Symptoms of alcohol intoxication with one important exception—no odor of alcohol on the breath.
2. Staggering or stumbling in classrooms or halls.
3. May fall asleep in class.
4. Lacks interest in school activities.
5. Is drowsy and may appear disoriented.

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* This information is reproduced from "Parental Alert," copies of which may be obtained on request to the Broward County Medical Association, 2200 South Andrews Ave., Fort Lauderdale, Fla. 33316.

Questionnaires were sent to 4,000 of the 5,450 licensed physicians in the District of Columbia and to 1,000 of the District's licensed dentists. Approximately 1,710, or 34.2 per cent, responded—1,516 physicians and 194 dentists.

Of the number responding, 596 never smoked, 669 are former smokers, and 445 are still smoking. An overwhelming majority, or 95 per cent, considered cigarette smoking a health hazard. One out of 100 did not consider cigarette smoking a health hazard, and 1 out of 25 was undecided.

Concerning cigarette smoking as a health hazard, 954 of the physicians and dentists advised all of their patients of the ill effects of smoking; 576 offered advice to their patients with specific conditions; and 180 advised no patients at all about the smoking problem.

The survey showed that the majority of the District's medical practitioners consider cigarette smoking a health hazard, advise their patients concerning cigarette smoking as a health hazard, and recognize the importance of their attitudes and actions in setting an example to their patients.

Smoking has not decreased in the general population as greatly as it has among medical professionals. The present rate of smoking among adult males in the Nation is estimated to be 52 per cent compared to the 29.6 per cent smoking rate among physicians.

Health then is a compelling reason to stop smoking, but it is by no means the only reason. In his article, "How To Help Your Patient Stop Smoking," Dr. Donald T. Frederickson points

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out: "Some people stop smoking because they are annoyed at having lost control of their smoking. Others will discontinue smoking as a positive influence for their children.

"Others stop for esthetic reasons—they consider the habit dirty or otherwise personally offensive. For some, the economics of smoking may have significance—a 30-year habit at 5 per cent compound interest adds up! And there are those who will stop in response to a challenge—they will stop on a bet!"

As physicians we should be sensitive to these incentives and appreciate that what motivates one smoker may not work for another. But at all times we should advise our patients not to smoke cigarettes.

By so doing we concur with Dr. Robert H. Browning, Professor of Medicine (pulmonary diseases) at Ohio State University College of Medicine, who said: "Most of us who see patients will save more lives by the practice of preventive medicine among cigarette smokers than we will in other aspects of our own medical practice."

Raymond L. Standard, M.D., M.P.H.
Acting Director,
D.C. Department of Public Health

NEW MEMBERS

Active

Thomas J. Calhoun, M.D. Office: Freedmen's Hospital. Born in Marianna, Florida. Medical degree: Meharry Medical College, 1963. Specialty: General Surgery.

Maurice C. Corbin, M.D. Office: 7603 Georgia Avenue, N.W. Born in Pulaski, Va. Medical degree: Howard University, 1953. Specialty: Psychiatry.

Nemesio G. Cuevo, M.D. Office: Washington Hospital Center. Born in Jaen, Nueva Ecija, Philippines. Medical degree: University of Santo Tomas, 1951. Specialty: Anesthesiology.

John A. Dowling, M.D. Office: 2150 Pennsylvania Avenue, N.W. Born in Holyoke, Mass. Medical degree: Harvard Medical School, 1959. Specialty: Plastic Surgery.

Prospero A. Flores, M.D. Office: Freedmen's Hospital. Born in the Philippines. Medical degree: University of the Philippines, 1961. Specialty: Internal Medicine.

Beinhard Z-Y. Hou, M.D. Office: Rogers Memorial Hospital. Born in Formosa (Taiwan). Medical degree: National Taiwan University, 1960. Specialty: Anesthesiology.

Wallace N. Jensen, M.D. Office: George Washington University Hospital. Born in Moroni, Utah. Medical degree: University of Utah School of Medicine, 1945. Specialty: Internal Medicine (Hematology).

Jacob J. Katzow, M.D. Office: 2141 K Street, N.W. Born in Milwaukee, Wis. Medical degree: Stanford University, 1960. Specialty: Psychiatry.

Ann M. Lux, M.D. Office: Area C, Mental Health Center, 1905 E Street, S.E. Born in Rochester, N.Y. Medical degree: Georgetown University, 1964. Specialty: Psychiatry.

Larry McGowan, M.D. Office: George Washington University Hospital. Born in Decatur, Ill. Medical degree: University of Illinois, 1954. Specialty: Obstetrics and Gynecology.

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Sean O'Reilly, M.D. Office: 2150 Pennsylvania Avenue, N.W. Born in Killarney, Ireland. Medical degree: National University of Ireland, Cork School of Medicine, 1952. Specialty: Neurology.

Genieann P. Patton, M.D. Office: 1616 18th Street, N.W. Born in Brooklyn, N.Y. Medical degree: Johns Hopkins University, 1943. Specialty: Psychiatry and Psychoanalysis.

Paul Snow, M.D. Office: Cafritz Memorial Hospital. Born in New York City. Medical degree: Louisiana State University, 1962. Specialty: Pathology.

Laszlo Vasarhelyi, M.D. Office: 106 Irving Street, N.W. Born in Hungary. Medical degree: Science University, Budapest, Hungary, 1953. Specialty: General Surgery.

Associate

Carolyn B. Robinowitz, M.D. Office: National Institute of Mental Health. Born in Brooklyn, N.Y. Medical degree: Washington University, 1964. Specialty: Psychiatry and Child Psychiatry.

Max Robinowitz, M.D. Office: Armed Forces Institute of Pathology. Born in Washington, D. C. Medical degree: Georgetown University, 1961. Specialty: Pathology.

Resident-Intern

Norman L. Barr, Jr., M.D. Office: Washington Hospital Center. Born in Washington, D. C. Medical degree: Georgetown University, 1965. Specialty: General Surgery.

Michael A. Lemp, M.D. Office: 20 Staniford Street, Boston, Mass. Born in Washington, D. C. Medical degree: Georgetown University, 1962. Specialty: Ophthalmology.

Patients Needed for Cancer Study

The coöperation of physicians is requested in the referral of patients for a study of ovarian cancer being conducted by the Department of Obstetrics and Gynecology at the George Washington University Medical Center.

Referrals of women with proven or suspected ovarian cancer are needed. Selected patients with a preoperative diagnosis of ovarian cancer or those with a proven operative diagnosis before radiation therapy or chemotherapy will be studied to determine peritoneal fluid cellular patterns, following which attempts at therapy will be made and experimental drugs may be used in conjunction with serial cellular studies.

All patients will be carefully followed during the course of these studies, and on completion they will be returned to the care of the referring physician, who will receive a summary of findings.

Physicians interested in having their patients considered for admission to these studies may write or telephone Dr. Larry McGowan, Department of Obstetrics and Gynecology, George Washington University Medical Center, 2150 Pennsylvania Ave., N.W., Washington, D. C. 20037: telephone (202) 331-6357.

►DOCPAC BRIEFS

or
DOCPAC Represents the 51st State

For many years I have had many semipolitical endeavors, but nothing in my medical career has ever given me the satisfaction that I have had as a pioneer in DOCPAC and in being associated with AMPAC. I have attended all of the AMPAC Workshops—the first in Chicago, the next in New York, and all of the recent ones in the District of Columbia. Never in my medical life have I ever seen such dedicated men as make up the body of AMPAC. I have met members from every state of the Union—doctors and their wives and a few from the allied professions. All of them were knowledgeable, dedicated, hard-working, honest people. It has been my pleasure to know most of the members of the AMPAC Board and its field staff and, again, the caliber of these men is beyond description.

It is my great hope that in the near future all doctors in the District of Columbia will become members of DOCPAC and, indirectly, AMPAC (American Medical Political Action Committee). It is my firm belief that in the not too distant future we shall get a President who will be sympathetic to us Washingtonians and a Congress so concerned with a sense of equal representation that it will make the District of Columbia the fifty-first state with full Senate and Congressional representatives. We doctors should prepare for this day. We have never known politics like the states have. Statehood may not come in my day; it may come in my children's or grandchildren's day, but I am thoroughly convinced it will happen.

Send your DOCPAC membership dues to Dr. William H. Cooper, 825 New Hampshire Avenue, N.W., Washington, D.C. 20007. Individual membership is $20.00; family membership (including wife and children), $30.00.

Richard T. Sullivan, M.D.

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Zero Population Growth

Zero Population Growth, Inc. is a new, Nationwide, nonprofit, volunteer organization geared to one goal: achieving zero population growth in the United States by 1980 and in the world by 1990. (At a zero rate of growth the population will remain constant; it will neither increase nor decrease.) Dr. Paul R. Ehrlich, author of the book, "Population Bomb" and a biologist at Stanford University, is its President. A news release from ZPG states:

"With our present rate of population growth the population of the United States will double in 67 years. More people mean more schools, highways, hospitals, houses, jails, factories, automobiles, parking lots, etc. Overpopulation is the basic cause of smog and pollution, it diminishes our open spaces, and destroys our forests and wildlife.

"The anticipated consequences of overpopulation for the world as a whole are even more disastrous. Today only 3 countries are self-sufficient with regard to food. Because of the current birth rate, since 1958 per capita food production in the world has been decreasing. The U.S. Government predicts that by 1985 per capita food production in the world will be below the subsistence level. We agree with other observers who believe that in such a world there will be little stability or peace.

"Our efforts are concentrated in 2 directions, education and legislation. Through advertising in the mass media, on billboards, and on leaflets distributed in doctors' offices we hope to educate people to limit their families to no more than 2 children (adopting more if they desire larger families). We plan to lobby at both the national and state level for laws that will achieve zero population growth, i.e., laws increasing the availability of contraceptives, including legalized abortion, and tax laws that would discourage families from having more than 2 nonadopted children."

Zero Population Growth, Inc. is located at 367 State Street, Los Altos, Calif. 94022.

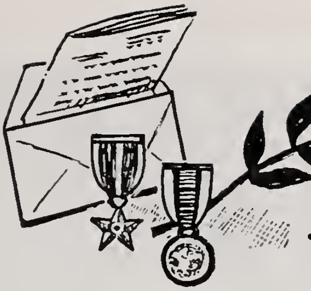
Self-employed Physicians Insured for Disability under Social Security

Many self-employed physicians reached an important Social Security landmark in October. With their earnings covered since 1965 they have now contributed to Social Security long enough to be insured for disability.

Social Security disability benefits can be paid to an insured person under 65 who has a physical or mental impairment so severe as to keep him from doing any substantial work for a year or longer. Payments begin after a waiting period of 6 full calendar months.

Benefits can be as much as $218 a month for a disabled person alone and up to $434.40 a month for a family. Self-employed physicians disabled in the immediate future, however, would probably not yet be eligible for these maximums since their earnings have been covered by Social Security for a relatively short time. Benefits are figured from a person's average covered earnings over a period of years.

"This disability protection can be a valuable supplement to the physician's private insurance," said Mr. Bernard Popick, Director of Social Security's Disability Program. "It is part of the total Social Security package of protection—disability, retirement, survivors' and health insurance—toward which the physician has been contributing."



News & Personals

Summary of Executive Board Actions

Proceedings of November 24 Meeting

Dinner for the Board members was served in the Exhibit Hall of the Medical Society. Dr. Paul R. Wilner, Chairman, presided at the meeting which was attended by Drs. Frank S. Bacon, Frank S. Pellegrini, Walter L. Henry, Jr., Thomas M. Arnett, Robert J. Coffey, Henry D. Ecker, John J. Hughes, C. Willard Camalier, Jr., and Mr. Thomas Sadler, Secretary. Present by invitation were Drs. Zigmond M. Lebensohn, Josephine E. Renshaw, and Edward W. Nieklas. The meeting was called to order by Dr. Wilner at 7:15 p.m.

The minutes of the October 27, 1969 meeting were approved as submitted.

Committee Meetings: The Secretary reported the following committees had met since the last meeting of the Board:

October	28	Legislative Committee
	29	Committee on Medical Aspects of Sports
	29	Breast Cancer Study Committee
	29	Committee on Mental Health
	30	Insurance Committee
November	4	Relative Value Study Committee
	5	Utilization Committee
	5	Fee Review Committee
	6	Physician Placement Committee
	7	Committee on Medicine and Religion
	12	Utilization Committee
	14	Committee on Emergency Medical Service
	17	Committee on Medical Aspects of Sports
	18	Grievance Committee
	18	Committee on Blood Banks
	18	Board of Credentials
	19	Legislative Committee
	20	Traffic Committee
	21	Utilization Committee
	24	Committee on Environmental Health

Board of Credentials: On recommendation of the Board of Credentials, 14 applicants were elected to Active membership, 2 to Associate membership, and 2 to Resident-Intern membership. Their names appear on page 62. Approval was given to the following changes in membership status:

Transfers

Active to Special: Francis D. Threadgill and L. Connor Moss

Active to Associate: Mauris M. Platkin and Richard L. Fields

Reinstatement

Associate: Walter H. Fanburg

Resignations

Active: Lester S. Blumenthal, Merwin L. Hummel, and Judith L. Rapoport

Dr. Camalier recommended that Dr. Roger O. Egeberg, Assistant Secretary of Health, Education, and Welfare, be nominated to Honorary membership. The Board of Credentials concurred in this nomination.

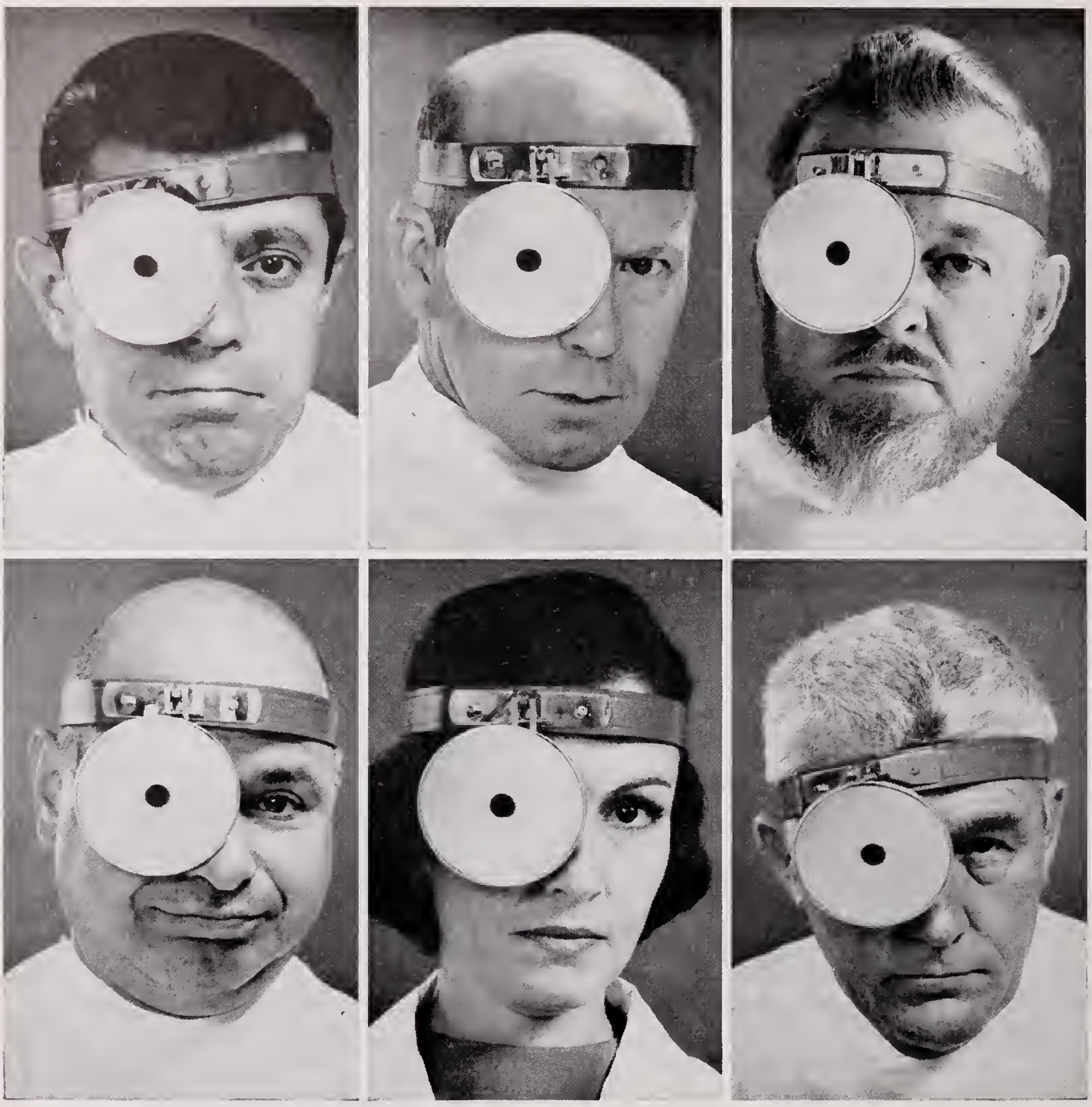
Abortions: Drs. Lebensohn, Renshaw and Nieklas appeared before the Board to present their views and feelings regarding the current controversy centering around abortions. A discussion period followed. Dr. Wilner advised them that President Bacon had established an Ad Hoc Committee on Abortions, representing a broad area of the Society, to study the situation and make its recommendations to the Board.

Other Business

1. The Board approved the list of 1970 committee members as submitted by President-elect Pellegrini.

2. In regard to the motion made at the Annual Business Meeting concerning Student AMA representation and participation in Society affairs, it was decided that the Board Chairman, the President and the Secretary discuss this matter and bring forward a recommendation to the Board in January.

3. Dr. Bacon reported to the Board on a request from the Mayor's Task Force for the Society to



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establish a program of Emergency House Call Service in the District. In essence, this would provide for "anyone in Washington being able to get medical help at home within 15 minutes." A motion was made and carried to refer this report to the Committee on Emergency Medical Service for its consideration.

4. The Board approved a request from the Interagency Council on Smoking to send a letter to the membership regarding "No Smoking Week," January 11–17, 1970.

5. A motion was made and carried to concur in the recommendations of the Committee on Environmental Health that the Society withhold approval of the proposed radiology regulations until such time as they are thoroughly studied by medical experts.

There being no further business, the meeting was adjourned at 9:45 p.m.

MEETINGS

The Chemotherapy Program of the National Cancer Institute is sponsoring a national conference, January 29 and 30, on the appraisal of 5-Fluorouracil and 1,3-bis(2-chloroethyl)-1-nitrosourea (BCNU). This, the first in a series of Chemotherapy Conferences, will appraise the usefulness of these 2 agents, one old and one new, in the chemotherapy of solid tumors.

The meeting will be held in the International Ballroom of the Washington Hilton Hotel and is open to all interested physicians. No registration fee will be charged. For further information address the Scientific Director for Chemotherapy, National Cancer Institute, Bethesda, Md. 20014.

"Care of the Dying Patient" will be the theme of a symposium to be held at Georgetown University Medical Center, March 4, in the Gorman Auditorium. It is being sponsored by the Department of Psychiatry in collaboration with the Departments of Medicine, Surgery and Pediatrics.

Guest speakers at the symposium will be Dr. Elizabeth Kubler-Ross, Assistant Professor of Psychiatry, University of Chicago, Pritzker School of Medicine, and author of the book, "On Death and Dying," and Dr. Henry K. Beecher, Dorr Professor of Research in Anesthesia, Harvard Medical School. Following each address there will be a panel discussion led by a member of the Georgetown faculty.

This half-day symposium, from 1 to 5 p.m., is open to all physicians, and there is no registration fee. The National Institute of Mental Health is giving financial assistance through a training grant. Further information may be secured from Dr. Louis F. Rittelmeyer, Jr., Assistant Professor of Psychiatry, Georgetown University Hospital, Washington, D.C. 20007

The 17th Sectional Meeting for Doctors and Nurses, sponsored by the American College of Surgeons, will be held at the Sheraton Park Hotel in Washington, March 16–18. Dr. Charles A. Hufnagel, Professor and Chairman, Department of Surgery, Georgetown University School of Medicine, heads the committee planning the doctors' program. Miss Doris Kirk, Operating Room Supervisor, George Washington University Hospital, and Sister De Sales, Operating Room Supervisor, Providence Hospital, are co-chairmen for the nurses' program. As guests of the College, nurses pay no registration fee.

In addition to general surgery, there will be programs in the specialties of gynecology-obstetrics, neurosurgery, ophthalmology, otolaryngology, plastic surgery, and urology.

Members of the D. C. Medical Society who are assisting Dr. Hufnagel in the preparation of the program are Drs. Raymond T. Holden, Hugo V. Rizzoli, John H. King, Jr., Armando G. DiBiasio, Alfred E. Jackson, A. F. Castro, Paul C. Adkins, Timothy J. Tehan, Thomas C. Lee, Burke Syphax, George A. Higgins, Jr., and William S. McCune.

Further information may be secured directly from the College at 55 Erie Street, Chicago, Ill. 60611.

The 13th Annual Joint Cardiac Symposium, sponsored by the Washington Heart Association and the Heart Association of Northern Virginia, Inc., will convene, Wednesday, April 8, in the Persian Room at the Marriott Twin Bridges Motor Hotel on U. S. 1, Washington, D. C. (Virginia side).

The United States Pharmacopeial Convention will hold its decennial meeting, April 8–10, at the Shoreham Hotel in Washington. On April 9 a special program will be presented honoring the 150th anniversary of the founding of the U. S. Pharmacopeia.

The U. S. Pharmacopeia is the only national organization representing both the pharmacy and medical professions, and its member organizations include state associations and societies of medicine and pharmacy, pharmacy and medical schools, various branches of the Federal Government, and national medical and pharmacy organizations. Delegates from these organizations will give new guidance and direction to USP programs. They will also select a new Committee of Revision for the 1970–1980 decade and a new Board of Trustees to carry out these programs. Dr. Lawrence E. Putnam will represent the D. C. Medical Society at this meeting.

The Children's Hospital of the District of Columbia will conduct its annual **Postgraduate Course in Pediatrics** on Friday and Saturday, April 10 and 11.

The Spring Session of the American Academy of Pediatrics will be held at the Washington Hilton Hotel on April 13, 14, and 15 in conjunction with the Centennial of Children's Hospital.

GENERAL NEWS

Dr. Maurice B. Gordon, of Ventnor, New Jersey, **is urging 199 other physicians** in the United States, who have reared their own children but still are deriving excellent incomes from their practices, **to establish $5,000 scholarships,** controlled by their county medical societies, to help children of less fortunate area residents become physicians. Dr. Gordon has established the first such scholarship under the name of The Dr. and Mrs. Benjamin Lee Gordon Memorial Scholarship in memory of his deceased parents. Each $5,000 scholarship is an outright gift, free of all strings and encumbrances, and is divided into 4 yearly stipends. No repayment is permitted.

For a county medical society to be able to accept such scholarship gifts on a tax-deductible basis, it must form a special tax-exempt charitable corporation acceptable to the Internal Revenue Service. The Atlantic County Medical Society accomplished this by forming the Atlantic County Medical Society Scholarship Fund, Inc. These medical scholarships in no way supersede the excellent work being done by the AMA-ERF and other national organizations, Dr. Gordon points out. They merely constitute an effort to round out the medical scholarship picture on a local level.

Further information on how to accomplish this project may be secured by writing Dr. Gordon at 6917 Atlantic Avenue, Ventnor, N. J. 08406. He emphasizes that money is not to be sent to him. The program must be administered by the local medical society.

Dr. Jesse L. Steinfeld, principal deputy to Dr. Roger O. Egeberg, Assistant Secretary of Health, Education, and Welfare, has been named by President Nixon as **Surgeon General of the Public Health Service.** Dr. Steinfeld will continue to serve as deputy assistant for health and science in HEW.

Dr. Carolyn S. Pincock, pediatrician of Silver Spring, Maryland, has been elected the 66th **President of the Montgomery County (Maryland) Medical Society.** She is a former Associate member of the D. C. Medical Society. Other new officers elected were:

Dr. Robert Angle, *Vice President*; Dr. Horace W. Bernton, *Treasurer*; and Dr. Seruch T. Kimble, *Chairman of Professional Relations.*

Dr. Thomas M. Wilson continues as Secretary of the Society.

Captain Bruce H. Smith, MC, USN, Director of the Armed Forces Institute of Pathology, was awarded the Sir Henry Wellcome Medal and Prize for 1969 during the 76th Annual Meeting of the Association of Military Surgeons of the United States at the Sheraton Park Hotel, November 16–19. The award, through competition, recognized Dr. Smith's essay on "Fatal Motorcycle Accidents of Military Personnel—A Study of 223 Cases." Dr. Smith is a consulting editor to the MEDICAL ANNALS. In addition to the medal he received an honorarium of $500.

Vice Admiral George M. Davis, MC, USN, Surgeon General of the Navy, was installed as the new President of the Association. He succeeded Major General James T. McGibony, MC, USA.

The Institute of Arthritis and Metabolic Diseases of the National Institutes of Health has **established a Digestive and Hereditary Diseases Branch.** Dr. Leonard Laster, former chief of the Gastroenterology Section, will head the new branch. Dr. Laster is also consulting editor to the MEDICAL ANNALS.

The Maurice A. Selinger Memorial Laboratory, a unit of Camp Glyndon for Diabetic Children at Glyndon, Maryland, 12 miles north of Baltimore, was dedicated, November 16. When he died in 1965 Dr. Selinger was a Life member of the Medical Society of the District of Columbia. A commemorative plaque was unveiled by his grandson, Maurice Arthur Selinger III.

Officials of the Maryland and D. C. Diabetes Associations who participated in the exercises included Dr. Wilson L. Grubb (Maryland) and Mr. Thomas W. Wilson (D. C.), Presidents of the 2 Associations; Dr. A. A. Silver, Medical Director and originator of the Camp; and Mr. Frederick A. Saffran and Dr. E. Clarence Rice, Executive Directors of the Associations. Camp Glyndon was placed in operation in July 1969.

PERSONALS

Dr. James M. Moss, of Alexandria, Va., an Associate member of the D. C. Medical Society, was named President-elect of the Medical Society of Virginia at its Annual Meeting at Virginia Beach on October 18, 1969. He will succeed Dr. William Grossmann, of Petersburg, in October 1970.

Dr. Moss, President-elect, Medical Society of Virginia

A medical graduate of the University of Virginia, Dr. Moss has practiced medicine in Alexandria for the past 20 years. He was President of the Alexandria Medical Society in 1958 and has served as President of the Heart Association of Northern Virginia, the Medical Council of the Greater Washington Metropolitan Area, the Virginia Society of Internal Medicine, the Diabetes Association of the District of Columbia, and other organizations.

He is Clinical Professor of Medicine at Georgetown University School of Medicine and Chief of the Diabetic Clinic at Georgetown Hospital. He has served as Chief of Medicine and President of the staff of Circle Terrace Hospital (Alexandria) and is presently on its Board of Directors.

Dr. Melvin G. Alper, Co-chairman of Neuro-ophthalmology, **and Dr. Gunter J. Augustin,** Senior Attending Radiologist, both of the Washington Hospital Center, received first award in scientific exhibits at the Annual Meeting of the American Academy of Ophthalmology and Otolaryngology in Chicago, October 12–16. Their exhibit, entitled "Diagnostic Evaluation of Monocular Exophthalmos," was prepared in collaboration with Major John W. Cowden, MC, USA, and Dr. Robert Penner, of the Walter Reed General Hospital. Reporting on 12 cases of tumors behind the eyes, the physicians based part of their work on ultrasonographic studies at Walter Reed.

ORBIT
EXOPHTHALMOS FROM LE

DR. MELVIN G. ALPER (left) AND DR. ROBERT PENNER, now of Chula Vista, Calif., standing before their prize-winning exhibit at the Chicago meeting of the American Academy of Ophthalmology and Otolaryngology. Co-exhibitors Augustin and Cowden were absent when the photograph was taken.

Dr. Lorin E. Kerr, an Associate member of the D. C. Medical Society, was one of 4 physicians who received the 1969 Presidential Award from the American Public Health Association for efforts to combat coal workers' pneumoconiosis. Dr. Kerr, who was recently appointed Medical Director of the Department of Occupational Health of the United Mine Workers of America, is Chairman of the Board of Group Health Association of America. The APHA meeting was held in Philadelphia, November 10-14.

Dr. Charles W. Jones has been appointed to a 5-year term on the Council of the Southern Medical Association, the Association's governing body. He is Associate Clinical Professor of Medicine at George Washington University School of Medicine.

OBITUARIES

Joseph Francis Fazekas, M.D.

(1910–1969)

Dr. Joseph F. Fazekas, formerly Chief of Staff of District of Columbia General Hospital, died, October 17, 1969 at Eastern Shore State Hospital in Cambridge, Md., where he was Director of Education and Training. His home was at One Stockton Road, Silver Spring, Md.

Dr. Fazekas was born in New Haven, Conn., September 11, 1910. The son of Hungarian immigrants, he had to earn his way through Albany (New York) Medical College. Receiving his degree in 1944, he interned the following year at St. Elizabeths Hospital, Washington. He was assistant resident in medicine at Peter Bent Brigham Hospital, Boston, for 6 months in 1945 and resident in medicine at Pratt Diagnostic Hospital, Boston, from 1945 to 1947. He continued his training another year as resident in neurology at the same hospital.

Dr. Fazekas came to D. C. General Hospital as Chief Medical Officer in 1948 and was appointed Chief of Staff the following year. His criticism of hospital administration and the D. C. Health Department brought Congressional hearings on Capitol Hill in the late 1950's. He was defended by members of his staff and also by then District Commissioner Karrick, who called him a "tempestuous individual" but one who appeared to get excited only about the delivery of good medical care. Because of his heart condition, Dr. Fazekas retired from his post at D. C. General in July 1959.

During his tenure at D. C. General he was credited with organizing an outpatient department, a doctors' pharmacy committee, a complete medical library, and insistence on the use of modern equipment and coördination of medical research.

Dr. Fazekas was staff neurologist at the New England Hospital Center in Boston in 1961–1962. He returned to Washington to serve as Associate Clinical Professor of Neurology at George Washington University and as consultant in neurology to the Veterans Administration Hospital from 1962 to 1966.

He was in Bangkok, Thailand, from 1966 to 1967 as Chief of the Army Medical Component Clinical Research Center. Upon his return to Washington he stated that this had been the most satisfactory experience in his life, and he urged other American medical students to advance their profession and improve their healing skills by serving in Vietnamese civilian hospitals. He was decorated by the Jewish War Veterans for his "humanitarian acts in relieving human suffering."

Dr. Fazekas was a member of the American Medical Association and a Fellow of both the American College of Physicians and the American College of Cardiology. He was elected to Active membership in the Medical Society of the District of Columbia in 1949. He was a member of the American Academy of Neurology and the American Association for the Advancement of Science.

A prolific writer, he contributed numerous articles to the literature, particularly in the field of neurology. He had submitted many papers to the Medical Annals, the last one appearing in the June 1969 issue.

Surviving him are his wife, Mrs. Mary Speirs Fazekas, a daughter, Michale, and 2 sons, Thomas and Joseph, of the home address. He also leaves 2 sisters, Mrs. Frank Griesing and Mrs. Robert Miller, both of New Haven, and 2 brothers, Leslie Fazekas, of New Haven, and John Fazekas, of Oakland, Calif.

Proceedings of Annual Business Meeting

(Continued from page 48)

Dr. Michael J. Halberstam made a motion from the floor to the effect that medical students become voting members of the Society.

Dr. Raymond T. Holden asked to speak both as a member of the Society and as a member of the Board of Trustees of the American Medical Association. He said the AMA Board was in favor of inviting medical students to participate in local medical society meetings and he too cited Colorado, where students will virtually become a county medical society. He stated he did not know the situation in Pennsylvania.

A motion was made from the floor that medical students be made voting members by any mechanism as soon as possible. After some discussion the motion was revised to read: "Resolved, That the Society instruct the Executive Board to implement the involvement of medical students in the affairs of the Society as soon as possible." This motion was seconded and carried.

There being no further business, the meeting was adjourned at 10 p.m.

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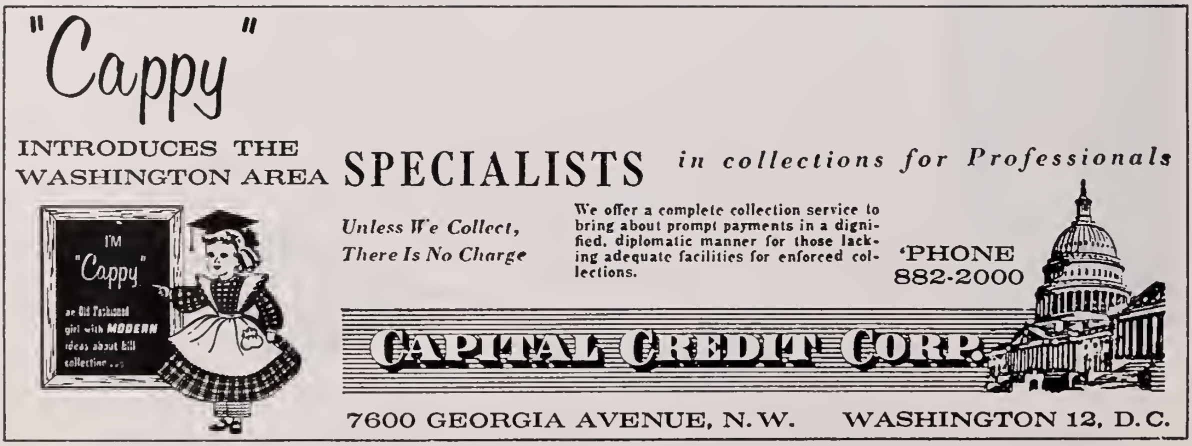

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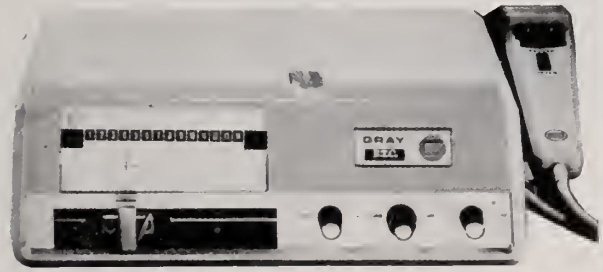

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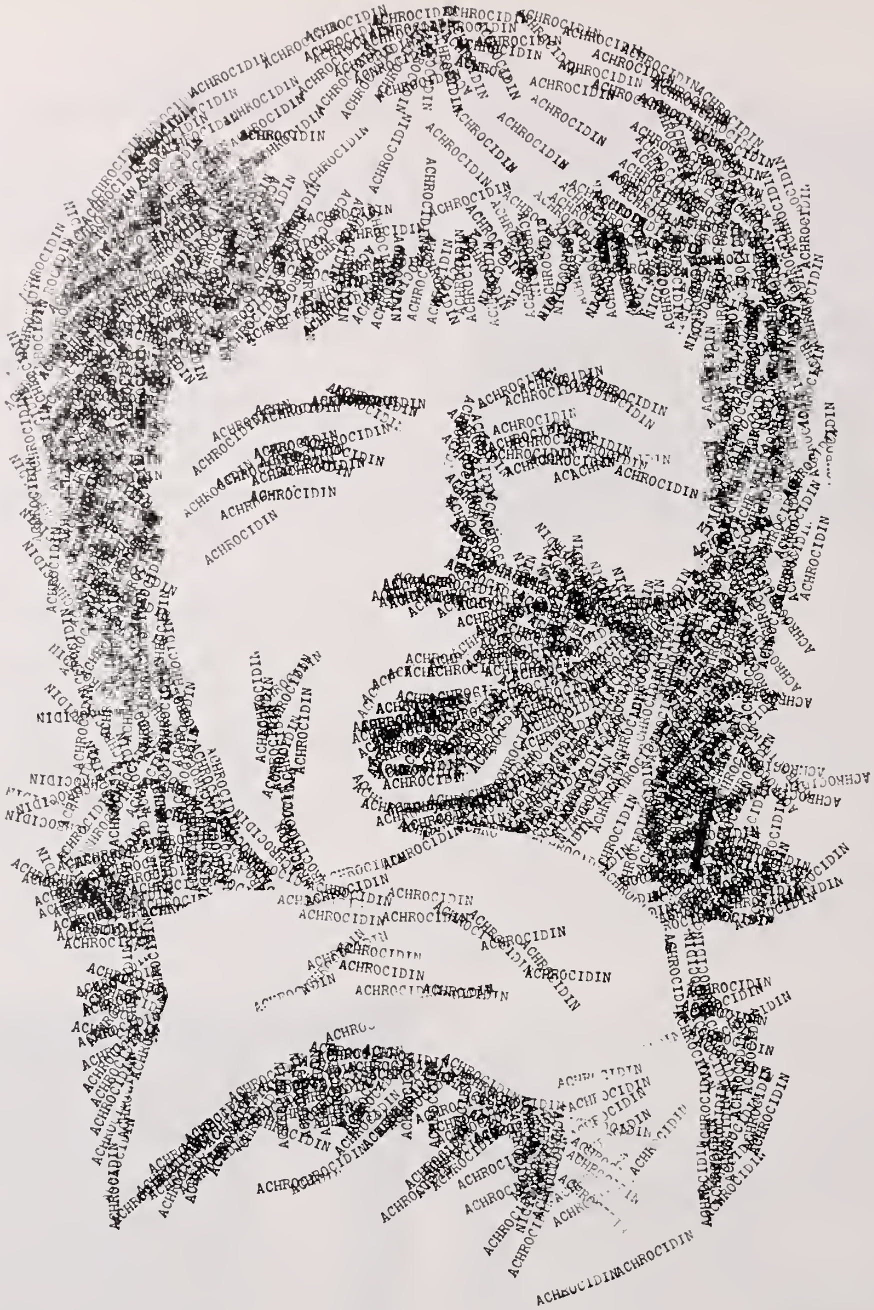

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February 8–9: AMA Congress on Medical Education. Palmer House, Chicago. Address: Dr. C. H. William Ruhe, Secretary, AMA Council on Medical Education, 535 North Dearborn Street, Chicago, Ill. 60610.

February 25–March 1: American College of Cardiology. Rivergate, New Orleans, La. Address: Mr. William D. Nelligan, Executive Director, 9650 Rockville Pike, Bethesda, Md. 20014.

March 12–14: Southern Society of Anesthesiologists. Williamsburg Lodge, Williamsburg, Va. Address: Dr. Richard G. Zepernick, Secretary-Treasurer, Mercy Hospital, New Orleans, La. 70119.

March 16–18: American College of Surgeons (Sectional), Joint Meeting for Doctors and Nurses. Sheraton Park Hotel, Washington. Address: Communications Division, American College of Surgeons, 55 East Erie Street, Chicago, Ill., 60611.

March 16–20: American College of Allergists. Americana Hotel, Bal Harbour, Fla. Address: Mr. Eloi Bauers, Executive Vice President, 2100 Dain Tower, Minneapolis, Minn. 55402.

March 19–24: American Dermatological Association. Boca Raton Hotel, Boca Raton, Fla. Address: Dr. Barrett Kennedy, Secretary, Louisiana State University Medical School, 1542 Tulane, New Orleans, La. 70112.

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Precautions: Before prescribing, carefully select patients, avoiding those responsive to routine measures as well as contraindicated patients. Obtain a detailed history and a complete physical and laboratory examination, including a blood count. Patients should not exceed recommended dosage, should be closely supervised and should be warned to discontinue the drug and report immediately if fever, sore throat, or mouth lesions (symptoms of blood dyscrasia); sudden weight gain (water retention); skin reactions; black or tarry stools or other evidence of intestinal hemorrhage occur. Make complete blood counts at weekly intervals during early therapy and at 2-week intervals thereafter. Discontinue the drug immediately and institute countermeasures if the white count changes significantly, granulocytes decrease, or immature forms appear. Use greater care in the elderly and in hypertensives.

Adverse Reactions: The more common are nausea and edema. Swelling of the ankles or face may minimized by withholding dietary salt, reduction in dosage or use of diuretics. In elderly patients and in those with hypertension the dru should be discontinued with the appearance of edema. The drug has been associated with peptic ulcer and may reactivate a latent peptic ulcer. The patient should be instructed to take doses immediately before or after meals or with milk t minimize gastric upset. Drug rash occasionally occurs. If it does, promptly discontinue the drug. Agranulocytosis, exfoliative derma

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tevens-Johnson syndrome,
s syndrome (toxic necrotizing
rmolysis), or a generalized
c reaction similar to serum
ss may occur and require
nent withdrawal of medica-
granulocytosis can occur
nly in spite of regular, repeated
l white counts. Stomatitis
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may require cessation of treat-
Such patients should not
e subsequent courses of the
Vomiting, vertigo and languor
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ons have been reported. While
finitely attributable to the
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be excluded. Thrombocytopenic purpura and aplastic anemia may occur. Confusional states, agitation, headache, blurred vision, optic neuritis and transient hearing loss have been reported, as have hyperglycemia, hepatitis, jaundice, hypersensitivity angiitis, pericarditis and several cases of anuria, glomerulonephritis and hematuria. With long-term use, reversible thyroid hyperplasia may occur infrequently. Moderate lowering of the red cell count due to hemodilution may occur.

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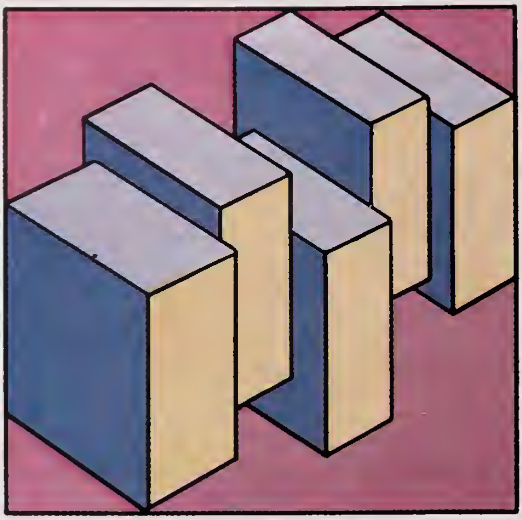
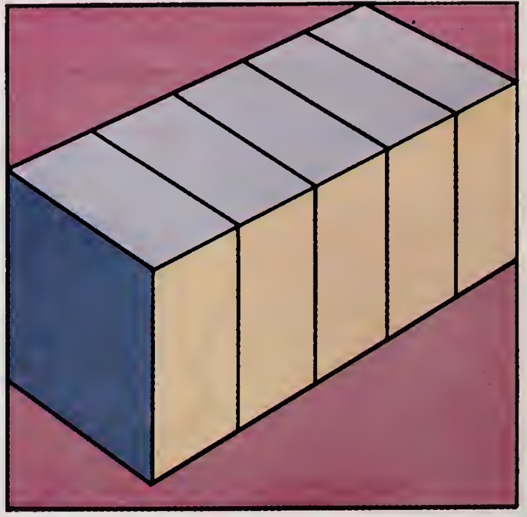


from the discord of anxiety...



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INDICATIONS: Indicated when anxiety, tension and apprehension are significant components of the clinical profile.
CONTRAINDICATIONS: Patients with known hypersensitivity to the drug.
WARNINGS: Caution patients about possible combined effects with alcohol and other CNS depressants. As with all CNS-acting drugs, caution patients against hazardous occupations requiring complete mental alertness (e.g., operating machinery, driving). Though physical and psychological dependence have rarely been reported on recommended doses, use caution in administering to addiction-prone individuals or those who might increase dosage; withdrawal symptoms (including convulsions), following discontinuation of the drug and similar to those seen with barbiturates, have been reported. Use of any drug in pregnancy, lactation, or in women of childbearing age requires that its potential benefits be weighed against its possible hazards.
PRECAUTIONS: In the elderly and debilitated, and in children over six, limit to smallest effective dosage (initially 10 mg or less per day) to preclude ataxia or oversedation, increasing gradually as needed and tolerated. Not recommended in children under six. Though generally not recommended, if combination therapy with other psychotropics seems indicated, carefully consider individual pharmacologic effects, particularly in use of potentiating drugs such as MAO inhibitors and phenothiazines. Observe usual precautions in presence of impaired renal or hepatic function. Paradoxical reactions (e.g., excitement, stimulation and acute rage) have been reported in psychiatric patients and hyperactive aggressive children. Employ usual precautions in treatment of anxiety states with evidence of impending depression; suicidal tendencies may be present and protective measures necessary. Variable effects on blood coagulation have been reported very rarely in patients receiving the drug and oral anticoagulants; causal relationship has not been established clinically.
ADVERSE REACTIONS: Drowsiness, ataxia and confusion may occur, especially in the elderly and debilitated. These are reversible in most instances by proper dosage adjustment, but are also occasionally observed at the lower dosage ranges. In a few instances syncope has been reported. Also encountered are isolated instances of skin eruptions, edema, minor menstrual irregularities, nausea and constipation, extrapyramidal symptoms, increased and decreased libido—all infrequent and generally controlled with dosage reduction; changes in EEG patterns (low-voltage fast activity) may appear during and after treatment; blood dyscrasias (including agranulocytosis), jaundice and hepatic dysfunction have been reported occasionally, making periodic blood counts and liver function tests advisable during protracted therapy.

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Volume 39 · Number 2 · February 1970

MEDICAL ANNALS of the District of Columbia

THE MEDICAL SOCIETY of the DISTRICT OF COLUMBIA

GEORGETOWN UNIVERSITY MEDICAL CENTER NUMBER

Dedicated to W. Proctor Harvey, M.D.

Lutembacher's Syndrome
JOSEPH K. PERLOFF, M.D.

Hypertension and Myxedema
J. A. RONAN, JR., M.D., AND A. M. WEINTRAUB, M.D.

Plasma Digitoxin Levels
P. F. BINNION, M.R.C.P., L. MORGAN, B.SC., A. M. POLLOCK, M.R.C.P., AND E. FLETCHER, F.R.C.P.

Myocarditis
C. VERNON SANDERS, M.D.

Cardiac Auscultation in Pregnancy
R. A. O'ROURKE, M.D., GORDON A. EWY, M.D., F. I. MARCUS, M.D., AND A. C. BLEICH, M.D.

Significance of Atrial Sound
ROBERT A. O'ROURKE, M.D.

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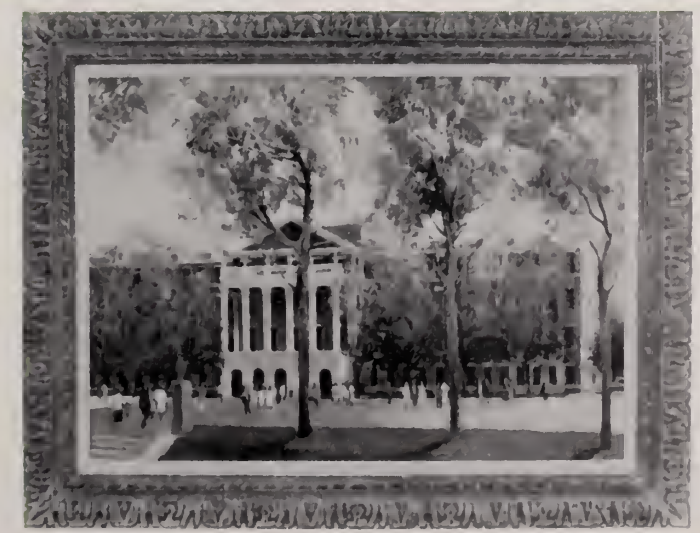

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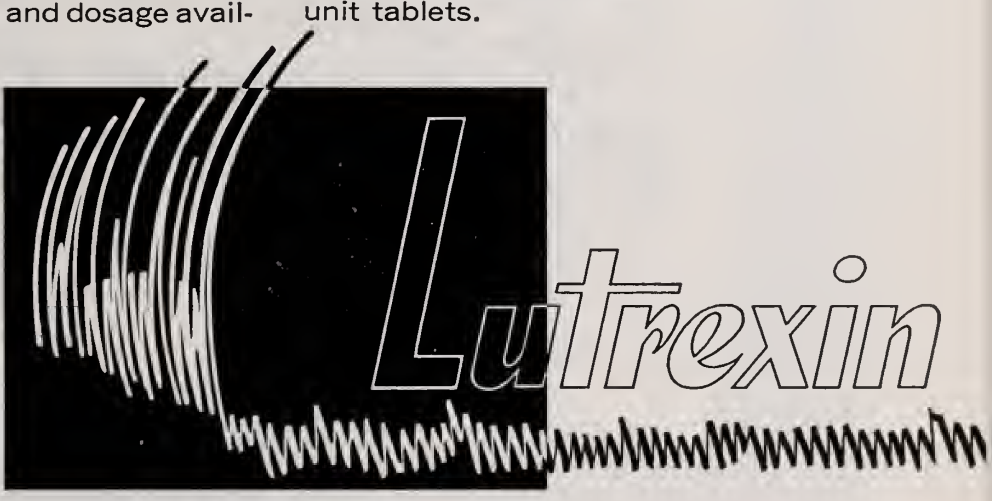

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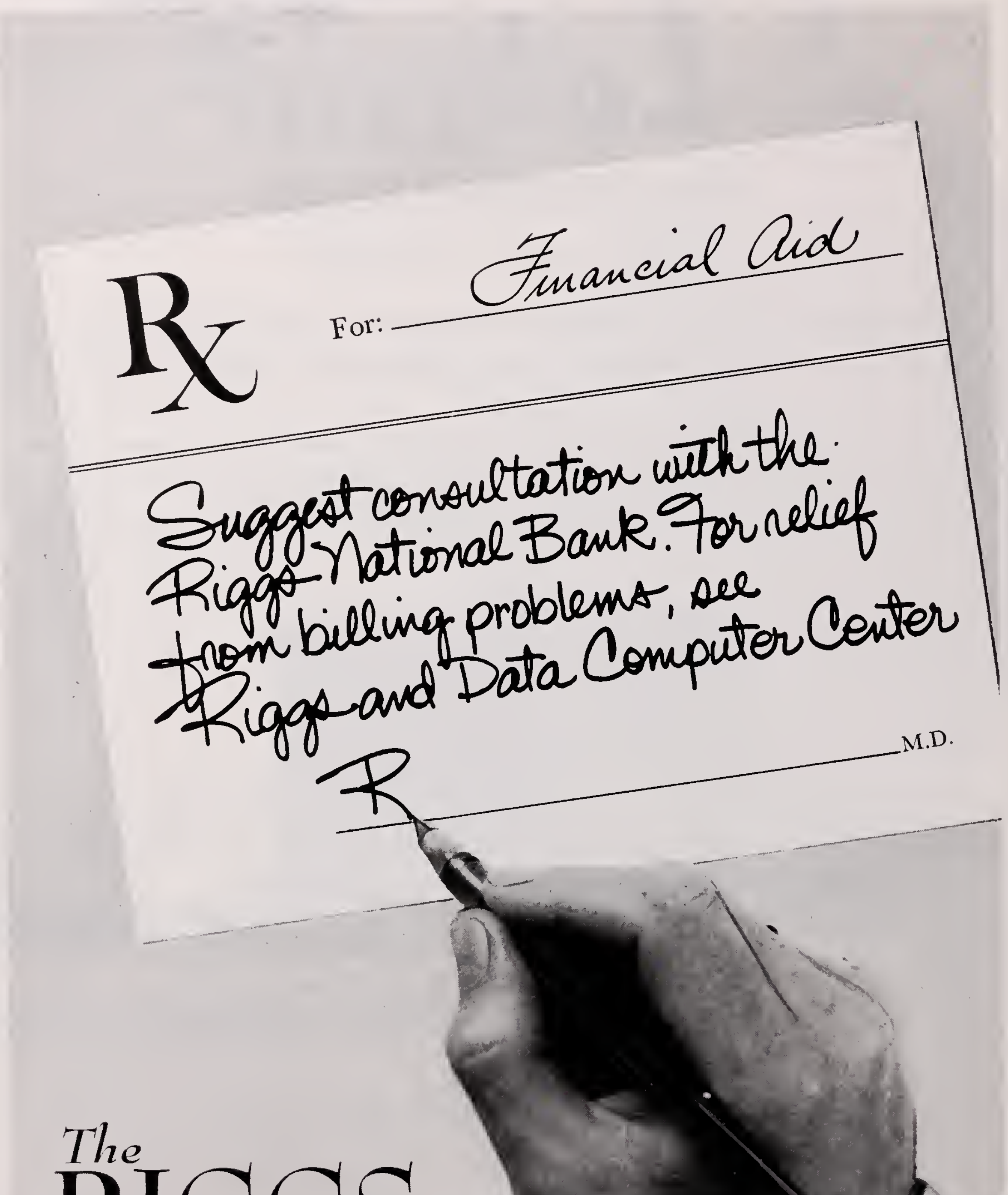

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Yearly Subscription, $8.00
Single Number, 75¢

Second-class postage paid at Baltimore, Md.
Published monthly at
Mount Royal and Guilford Avenues,
Baltimore, Maryland 21202

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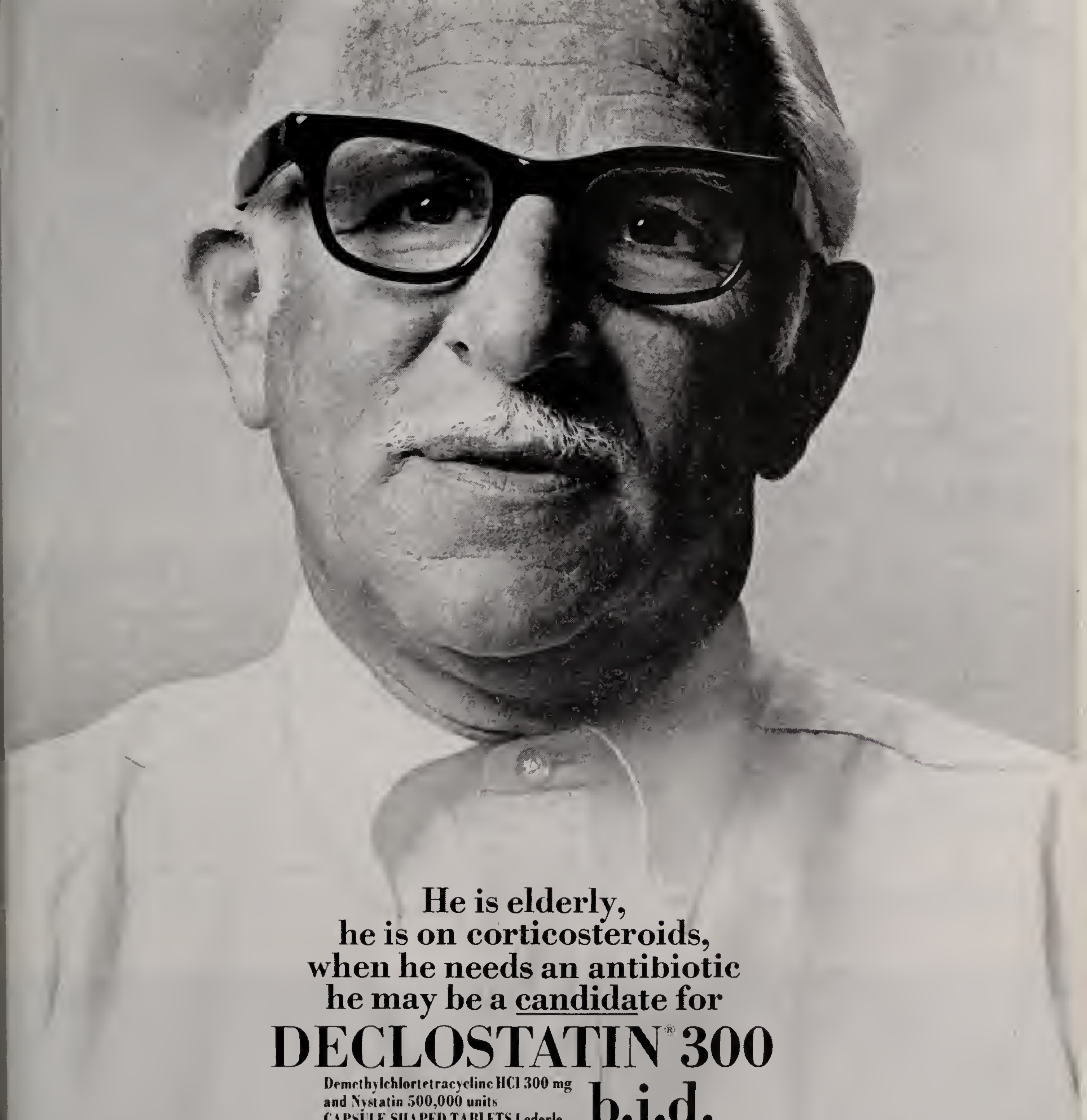

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utions: Overgrowth of nonsusceptible organisms may occur. Constant observation is essential. If new infections appear, appropriate measures should be taken.

In infants, increased intracranial pressure with bulging fontanels has been observed. All signs and symptoms have disappeared rapidly upon cessation of treatment.

Side Effects: Gastrointestinal system—anorexia, nausea, vomiting, diarrhea, stomatitis, glossitis, enterocolitis, pruritus ani. Skin—maculopapular and erythematous rashes; a rare case of exfoliative dermatitis has been reported. Photosensitivity; onycholysis and discoloration of the nails (rare). Kidney—rise in BUN, apparently dose related. Transien increase in urinary output, sometimes accompanied by thirst (rare) Hypersensitivity reactions—urticaria, angioneurotic edema, anaphylaxis Teeth—dental staining (yellow-brown) in children of mothers given thi drug during the latter half of pregnancy, and in children given the dru during the neonatal period, infancy and early childhood. Enamel hypoplasia has been seen in a few children. If adverse reaction or idiosyncrasy occurs, discontinue medication and institute appropriate therapy.

Average Adult Daily Dosage: 150 mg q.i.d. or 300 mg b.i.d. Should be given 1 hour before or 2 hours after meals, since absorption is impaire by the concomitant administration of high calcium content drugs, food and some dairy products. Treatment of streptococcal infections shoul continue for 10 days, even though symptoms have subsided.

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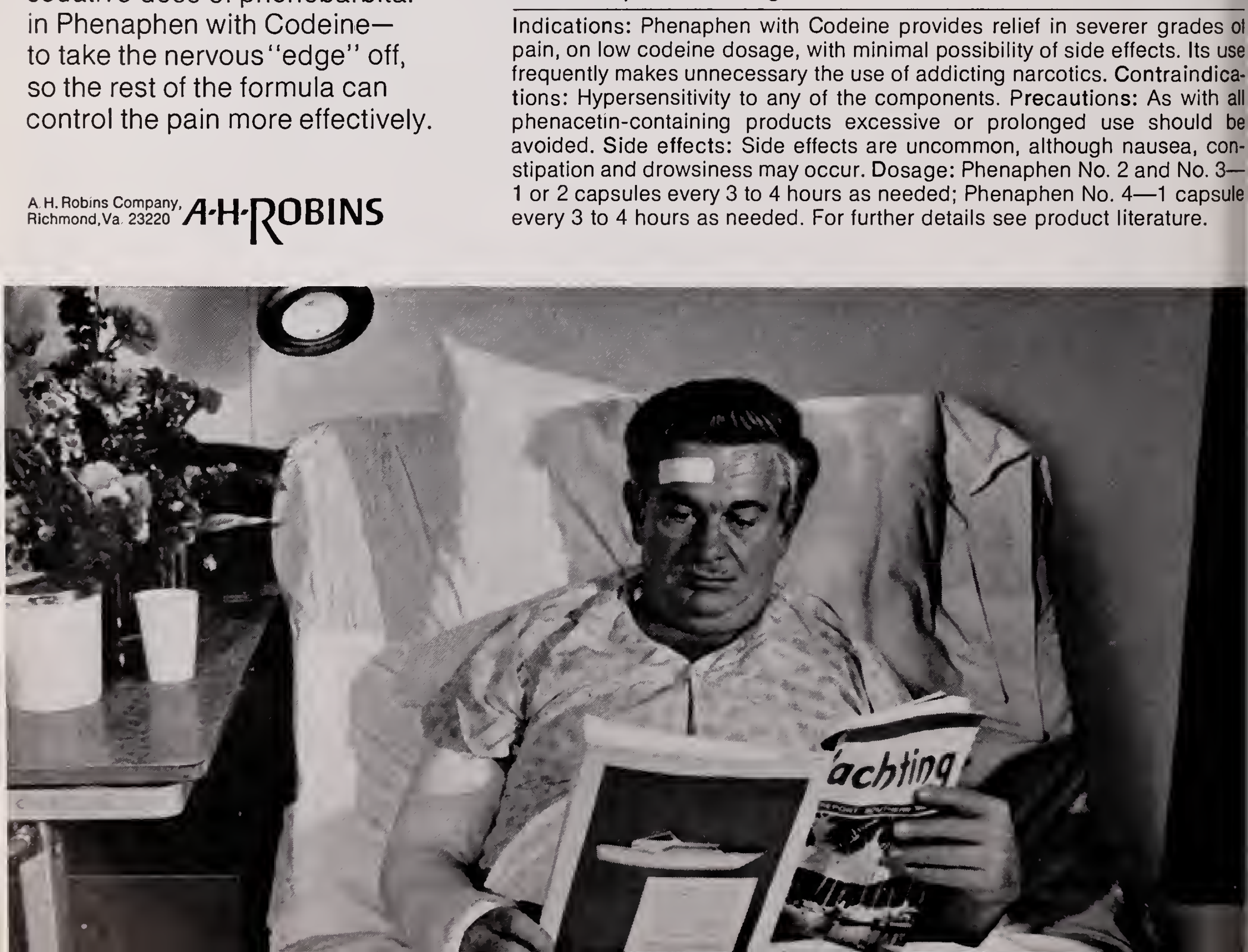
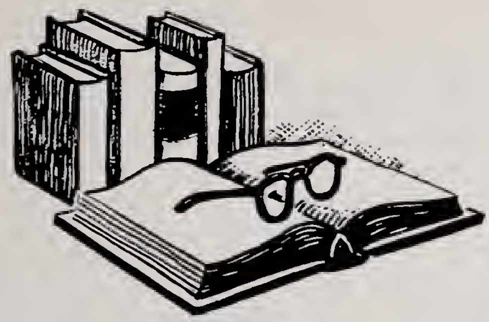
The compound analgesic that calms instead of caffeinates

Indications: Phenaphen with Codeine provides relief in severer grades of pain, on low codeine dosage, with minimal possibility of side effects. Its use frequently makes unnecessary the use of addicting narcotics. Contraindications: Hypersensitivity to any of the components. Precautions: As with all phenacetin-containing products excessive or prolonged use should be avoided. Side effects: Side effects are uncommon, although nausea, constipation and drowsiness may occur. Dosage: Phenaphen No. 2 and No. 3—1 or 2 capsules every 3 to 4 hours as needed; Phenaphen No. 4—1 capsule every 3 to 4 hours as needed. For further details see product literature.





Book Reviews

Current Practice in Orthopaedic Surgery 1969. Volume 4. John P. Adams, M.D., F.A.C.S., Editor. Price, $22.50. Pp. 286, with 322 illustrations. St. Louis: Mosby, 1969.

The fourth edition of "Current Practice In Orthopaedic Surgery" is similar in format to the previous editions but includes all new articles on different subjects.

The first 3 articles by Dr. Shands, Jr., giving the history of American orthopaedic surgery, are well written and are of interest. They add but little, however, to the knowledge of current practice in orthopaedic surgery.

Of particular note is the article by Leonard Goldner on the "Surgical Management of Clubfoot Deformities," which helps to reorient the surgeon toward early definitive treatment. It strikes a balance between the almost revered conservative treatment and the too little, too late surgical treatment.

The article on "Fractures and Dislocations of the Cervical Spine . . ." is a good review but adds little new to the diagnosis and management of these problems. Dr. Coventry's discussion of femoral osteotomy, noting the use of compression osteosynthesis, brings the use of the operation into sharper focus.

This edition of Current Practice, as one of a continuing series, will fit comfortably with the preceding editions.

Brantley P. Vitek, M.D.

The Practice of Refraction, 8th ed. Sir Stewart Duke-Elder, G.C.V.O., D.Sc., Ph.D., LL.D., M.D., F.R.C.S., F.A.C.S., F.R.A.C.S., F.R.C.P., F.R.S. Price, $11.75. Pp. 329, with 244 illustrations. St. Louis: Mosby, 1969.

Of all the natural shocks that flesh is heir to, the most widespread is refractive error (excluding, I suppose, neurosis). The correction of refractive errors is a large part of general ophthalmologic practice in this country, and Duke-Elder's "Practice of Refraction" has been read by thousands over the decades since the appearance of the first edition in 1928. It is still the most complete, compendious, and clinically-oriented primer on refraction available today.

This new edition differs only slightly from the preceding one. New developments, such as the use of ultrasound for measurement of intraocular distances, are briefly mentioned, and only minor abridgments made.

The discussion of eyestrain, unfortunately, perpetuates the emphasis on minute errors of refraction as a significant cause of headache. This concept has over the years led to tremendous overprescribing of glasses, especially by refractionists with a financial interest in spectacle dispensing. In a book widely read by medical refractionists it would have been more appropriate in this regard to discuss newer concepts of stress physiology and the therapeutic effects of suggestion. If the physician prescribes a placebo, he should at least recognize it as such.

Nonetheless, this thin volume remains the first book a resident in ophthalmology should read. It should be read cover-to-cover and kept on the shelf for rereading until thoroughly assimilated.

Ronald S. Fishman, M.D.

Therapeutic Radiology: Rationale, Technique, Results, 3rd ed. William T. Moss, M.D., and William N. Brand, M.D. Price, $22.50. Pp. 564, with 303 illustrations. St. Louis: Mosby, 1969.

The third edition of this fine text brings us up to date on the advances in the field of irradiation therapy.

Radiological physics and radiobiology are concisely covered. A good discussion is presented with respects to radiotherapy and surgery, both pre- and postoperatively, and the effects of each upon the other.

The major portion of the text is directed to irradiation therapy for malignancies involving each organ system. The various modalities of therapy for most neoplasms are given, with pertinent statistics of survival rates and local spread.

The pathology of malignancy is mentioned in terms of relative radiosensitivity and in classification of cell types in the various organ systems.

One notable feature is in radiation pathology where a concise description of early and late radiation changes are discussed. There is no attempt to minimize the fact that curative irradiation carries a definite morbidity as well as mortality.

The text is useful as a quick source of well-documented facts and suggested treatment of the most commonly seen malignancies. A few rare types such as malignant thymomas are not presented.

The book would be very useful to those giving radiotherapy and others working in the field of oncology.

U. V. Wilcox, M.D.

(*Continued on page 10*)

Book Reviews

(*Continued from page 9*)

Acute Renal Failure: Diagnosis and Management. Robert C. Muehrcke, M.D., F.A.C.P. Price, $19.75. Pp. 343, with 126 illustrations. St. Louis: Mosby, 1969.

This book covers thoroughly the variety of conditions causing and related to the acute suppression of renal function. The author calls upon his vast personal experience with these diseases and, for the most part, successfully imparts the current concepts of etiology and management.

The text is liberally seasoned with illustrative cases. The case-related photomicrographs are well located in relation to the text, are of excellent black and white quality, and include both light and electron microscopic studies.

The section on nephrotoxic etiology of acute renal failure covers 48 pages and is broad in scope and detail. One of the strongest aspects of the book is an extensive, up-to-date bibliography of over 1,100 citations.

The organization of the text, however, is somewhat erratic. Guides to the dosage of antibiotics are in the section on clinical features of acute oliguric renal failure rather than in the section on management. The section on management could have been expanded since the reader of this book may well look to it for assistance in the day-to-day and hour-to-hour handling of the anuric patient.

The typographic errors are numerous and annoying.

The volume is recommended as a guide through the pitfalls and morasses that plague the physician dealing with the patient with acute renal failure.

Ira N. Tublin, M.D.

Manual on Artificial Organs. Volume I. The Artificial Kidney: A guide to understanding for the physician and for the patient. Yukihiko Nosé, M.D., Ph.D. Price, $27.75. Pp. 343, with 401 illustrations. St. Louis: Mosby, 1969.

This folio volume was written by Dr. Nosé and the staff of the Cleveland Clinic to summarize all of the information on the artificial kidney, with 3 objectives in mind, namely, to help educate professional personnel, to help train "home dialysis" patients and their relatives, and to present a summary of the present systems for dialysis. Dr. Nosé has performed this task notably. The material in each chapter is presented with clarity, and through copious use of illustrations in a graded manner it meets the requirements of those with little medical background as well as those well conversant in the theory and practice of dialysis and nephrology.

We have used this manual for the past month in training patients and professional personnel and find it functions well in actual use. By reading only as deeply in a given chapter as his ability allows, the reader is provided the desired information he needs. When the reader becomes more proficient or curious, he can delve more deeply into the subject under discussion by reading further in the chapter. This is a novel and successful approach.

This book can be recommended for all persons interested in and working with dialysis in the care of patients with renal disease. They would include physicians, nurses, technicians, social workers, and dialysis patients and family. This volume, which is almost self-educating, will be used to best advantage for patient education.

Norman C. Kramer, M.D.

Bacterial Episomes and Plasmids. A Ciba Foundation Symposium. Edited by G. E. W. Wolstenholme and Maeve O'Connor. Price., $12.50. Pp. 268. Boston: Little, 1969.

A Symposium on Bacterial Episomes and Plasmids was held at the Ciba Foundation Headquarters at 41 Portland Place, London, by 23 distinguished leaders in the field of research in microbiology.

Co-chairmen of the Symposium were W. Hayes of the Department of Molecular Biology, Edinburgh; S. E. Luria of the Department of Biology, Massachusetts Institute of Technology, Cambridge, Mass.; and M. R. Pollock, Department of Molecular Biology, University of Edinburgh.

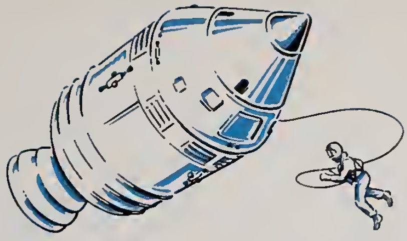
The average physician will read no further than the introduction, and that to satisfy his curiosity as to "What are episomes and plasmids?" If he reads carefully he will find that these are terms for theoretical entities which affect the cytoplasmic or chromosomal (or both) makeup of bacteria. Furthermore, the term "episome," having been used for 10+ years and understood to imply chromosomal insertion of an altering element, has, in the opinion of Co-chairman Hayes, outlived its usefulness. He suggests the "all-embracing substitute" term, "plasmid."

Subsequent chapters with discussions of the participants recorded verbatim seem to indicate that "plasmid" was the term of choice, at least in September of 1968.

There is a definite reason for clinical interest in this book because the subjects discussed here deal ultimately with the matter of antibiotic-resistant strains of bacteria, with latency of certain pathogens, and with veterinary uses of drugs and transferable drug resistance to man. Certainly this volume should be available in hospital and medical school libraries and in microbiology laboratories.

The Ciba Foundation deserves commendation for providing a meeting-place for conferences such as this one, and for editorial, publishing, and distribution services which speed the dissemination of knowledge.

Melba M. Moore, M.D.



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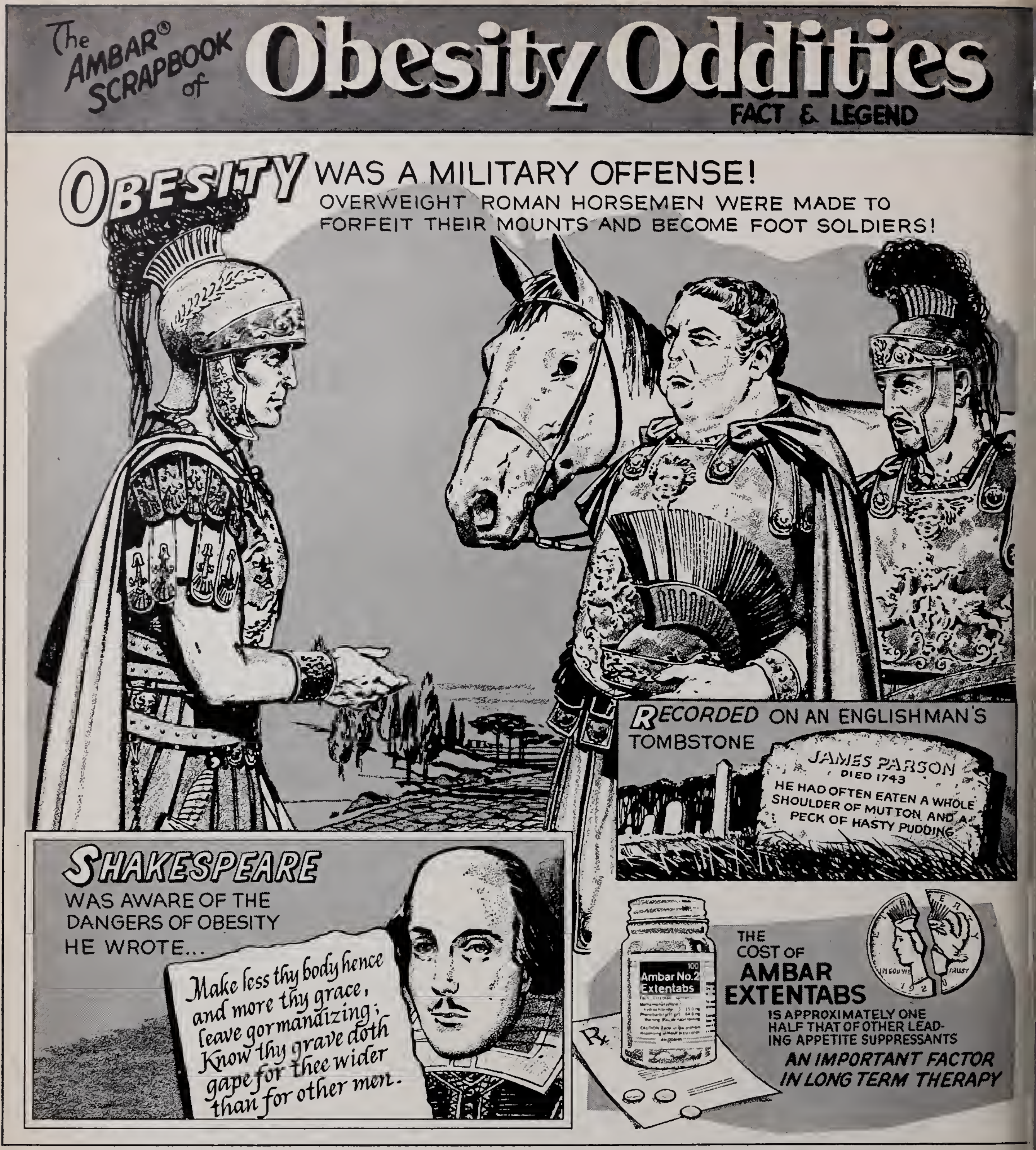
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February 28–March 1: AMPAC Workshop. Sheraton-Park Hotel, Washington. Address: American Medical Political Action Committee, 520 North Michigan Avenue, Chicago, Ill. 60611.

March 12–14: Southern Society of Anesthesiologists. Williamsburg Lodge, Williamsburg, Va. Address: Dr. Richard G. Zepernick, Secretary-Treasurer, Mercy Hospital, New Orleans, La. 70119.

March 16–18: American College of Surgeons (Sectional), Joint Meeting for Doctors and Nurses. Sheraton Park Hotel, Washington. Address: Communications Division, American College of Surgeons, 55 East Erie Street, Chicago, Ill., 60611.

March 16–20: American College of Allergists. Americana Hotel, Bal Harbour, Fla. Address: Mr. Eloi Bauers, Executive Vice President, 2100 Dain Tower, Minneapolis, Minn. 55402.

March 19–24: American Dermatological Association. Boca Raton Hotel, Boca Raton, Fla. Address: Dr. Barrett Kennedy, Secretary, Louisiana State University Medical School, 1542 Tulane, New Orleans, La. 70112.

March 20–21: National Congress on Socio-Economics of Health Care. Palmer House, Chicago. Address: Mr. Nicholas M. Griffin, AMA Division of Health Service, 535 Dearborn Street, Chicago, Ill. 60610.

March 20–22: American Psychosomatic Society. Washington Hilton Hotel, Washington. Address: Dr. Herbert Weiner, Secretary-Treasurer, 265 Nassau Road, Roosevelt, N. Y. 11575.

March 30–April 4: American College of Radiology. Hotel Statler-Hilton, Dallas. Address: Mr. William C. Stronach, Executive Director, 20 North Wacker Drive, Chicago, Ill. 60606.

April 8–10: 150th Anniversary Meeting of United States Pharmacopeial Convention. Shoreham Hotel, Washington. Address: Mr. Z. A. Hoffman, Secretary, 4630 Montgomery Ave., Bethesda, Md. 20014.

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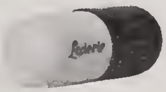

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THIS IS THE FOURTH of a sixth series of special numbers of the MEDICAL ANNALS, the scientific material for which is supplied by medical institutions and scientific organizations in the Washington Metropolitan Area. This GEORGETOWN UNIVERSITY MEDICAL CENTER NUMBER is dedicated to W. PROCTOR HARVEY, M.D., Professor of Medicine and Director of the Division of Cardiology, who is serving this year as President of the American Heart Association. For this number the Editorial Board is indebted to Dr. Irving B. Brick, Consulting Editor of the MEDICAL ANNALS, and Dr. T. James Waters, who secured the papers which appear in this issue.

Lutembacher's Syndrome—A Contemporary Appraisal*

JOSEPH K. PERLOFF, M.D., F.A.C.P.†

IN 1916 Lutembacher[1] published the first comprehensive account of atrial septal defect with mitral stenosis although individual reports had appeared since 1865.[2] The combination of these 2 defects has since come to be known as Lutembacher's syndrome, but opinion differs as to what lesions the syndrome should embrace. Lutembacher proposed that mitral stenosis was congenital despite the fact that his patient was 61 years old. Current evidence supports the opposite view, namely, that the mitral stenosis is usually rheumatic.[3-15] Nevertheless the young age of an occasional patient makes congenital mitral stenosis a plausible though less likely possibility.[16] If it is conceded that the mitral valve disease is rheumatic, then the problem arises of including coëxisting mitral incompetence in Lutembacher's syndrome.[6] In one patient with an atrial septal defect, obstruction at the mitral orifice was neither rheumatic nor congenital but due instead to a left atrial myxoma.[17]

Just what constitutes an acceptable type of left-to-right interatrial shunt in Lutembacher's syndrome is also unsettled. When the interatrial communication takes the form of a typical ostium secundum atrial septal defect the issue is clear enough.[1, 4, 6] However, Lutembacher believed that the high left atrial pressure in mitral stenosis might cause left-to-right shunting through a patent foramen ovale. There is now substantial evidence that this view is correct. The large, high-pressure left atrium of mitral stenosis occasionally stretches the margins of a patent foramen ovale and causes a left-to-right shunt.[9, 12, 18, 19, 20] Still another variety of left-to-right shunt at atrial level must be considered, namely, anomalous connection of the right pulmonary veins to the right atrium with an intact atrial septum. Although this anomaly rarely occurs as an isolated congenital malformation,[21-24] a number of cases have been reported with coëxisting mitral stenosis.[9, 25-30] It has been suggested that the concept of Lutembacher's syndrome be broadened to include these cases since they represent mitral stenosis with left-to-right shunts at atrial level.[9]

Anatomic variations in Lutembacher's syndrome invariably exist and will continue to be debated. However, if too many variations are included, the image of the syndrome blurs and its

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* This study was supported by United States Public Health Service Career Program Award HE-14,009 and by the Eric T. Paglin Fund for Cardiovascular Teaching and Research.

† Associate Professor of Medicine, Georgetown University School of Medicine, 3800 Reservoir Road, N.W., Washington, D. C. 20007.

essence vanishes. For the purpose of this discussion, the term Lutembacher's syndrome will be taken to mean a congenital defect in the atrial septum together with acquired or occasionally congenital mitral stenosis. Minor degrees of coexisting mitral incompetence may be present but are irrelevant to the basic idea. The general problem is believed to consist of a congenital atrial septal defect upon which acquired mitral stenosis is imposed.

When atrial septal defect and mitral stenosis occur together each lesion modifies the hemodynamics and the clinical expressions of the other. The resulting clinical manifestations depend chiefly upon the size of the defect, the degree of mitral stenosis, and the distensibility characteristics of the right ventricle. All of these contributions vary independently and in so doing color the clinical picture.

Let us first examine the physiologic effects that mitral stenosis exerts on the atrial septal defect. Recall that the left-to-right shunt in uncomplicated atrial septal defect is determined by the comparative ease with which left atrial blood flows through the defect into the relatively distensible right ventricle. Mitral stenosis increases resistance to the flow of blood from the left atrium into the left ventricle.[31, 32] Accordingly, the left-to-right shunt increases. The magnitude of the increase varies with the size of the interatrial communication and the degree of mitral stenosis. Generally speaking, for any given size atrial septal defect, the more severe the mitral stenosis, the larger the left-to-right shunt; similarly, for any given degree of mitral stenosis, the larger the atrial septal defect (up to a point) the greater the left-to-right shunt. There is an additional item of interest: When the defect in the atrial septum is large and the mitral stenosis severe, diastolic flow from left atrium into right heart is augmented; however, when a small atrial septal defect occurs with severe mitral stenosis, the left-to-right shunt, although comparatively small, becomes continuous since a pressure difference across the interatrial communication exists throughout the cardiac cycle.[9, 20, 33]

Now let us turn our attention to the effect of an atrial septal defect on mitral stenosis. Normally, the left atrium has only 1 exit, the mitral orifice. Stenosis of that orifice interferes with left atrial emptying so that the pressures in the left atrium, pulmonary veins, and pulmonary capillaries rise. An atrial septal defect constitutes an alternative exit for left atrial blood. If the defect is large enough the left atrium effectively decompresses,[8, 9] left and right atrial pressures equalize and the mitral gradient either diminishes, vanishes altogether, or may appear only during exercise.[9] These hemodynamic benefits are real, but they are purchased at the price of decreased flow into the left ventricle and a low systemic output.[8] The idea that an interatrial communication might exert a favorable effect on the hemodynamics of mitral stenosis is not new. Firkett[34] proposed this in 1880, and in 1949 Bland and Sweet[35] surgically treated mitral stenosis by anastomosing a right pulmonary vein to the azygous vein after which the left atrial pressure fell. With the advent of pulmonary hypertension, the right ventricle becomes less distensible, the left-to-right shunt diminishes, more left atrial blood enters the left ventricle, and the systemic output rises.[8]

Lutembacher's syndrome has a predilection for females.[3] This is understandable since both atrial septal defect and rheumatic mitral stenosis are more prevalent in females. Familial occurrence has been reported only once, and this seems to represent an isolated observation.[13] Even in the familial cases the mitral stenosis was rheumatic.[13] Some patients with Lutembacher's syndrome give a history of rheumatic fever,[6, 13] but many do not. The absence of such a history in no way militates against the diagnosis of acquired mitral stenosis, since it is not at all uncommon for rheumatic mitral stenosis to occur without a history of rheumatic fever.

When the atrial septal defect is small and the mitral stenosis tight, the natural history resembles that of ordinary mitral stenosis. When the atrial septal defect is large the most interesting feature of the history is the ameliorating effect of the interatrial communication on the clinical course of mitral valve obstruction. Under these circumstances, symptoms related to pulmonary venous congestion are relatively uncommon and develop late.[8, 14] The orthopnea, paroxysmal nocturnal dyspnea, pulmonary edema, and hemoptysis that are characteristic of uncomplicated mitral stenosis are attenuated in Lutembacher's syndrome with large atrial septal defect, although these symptoms may be replaced by fatigue due to low systemic output. The ameliorating effect of the atrial septal defect was evident in early descriptions; Lutembacher's original patient was a 61-year-old woman who had 7 pregnancies, and Firkett's patient[34] was a 74-year-old woman who had endured 11 pregnancies. Survival to advanced age has been reconfirmed,[10, 20, 36, 37] and in one instance an 81-year-old woman lived a normal life with no symptoms related to her disease until her seventy-fifth year.[38] However, these favorable reports should not obscure the fact that the natural history of large atrial septal defect is unfavorably influenced by mitral stenosis which tends to augment the existing left-to-right shunt[2, 39] and predisposes to atrial fibrillation and cardiac failure.[14] Furthermore, the presence of mitral valve disease makes these patients susceptible to bacterial endocarditis as opposed to subjects with uncomplicated atrial septal defect.[12, 39, 40] One patient died of a brain abscess, but this case was an isolated occurrence.[41]

The arterial pulse in Lutembacher's syndrome may be somewhat smaller than in uncomplicated atrial septal defect because of the reduced left ventricular stroke volume (figure 1). Atrial fibrillation seems to occur more frequently and at an earlier age than in atrial septal defect alone.[4, 14, 42]

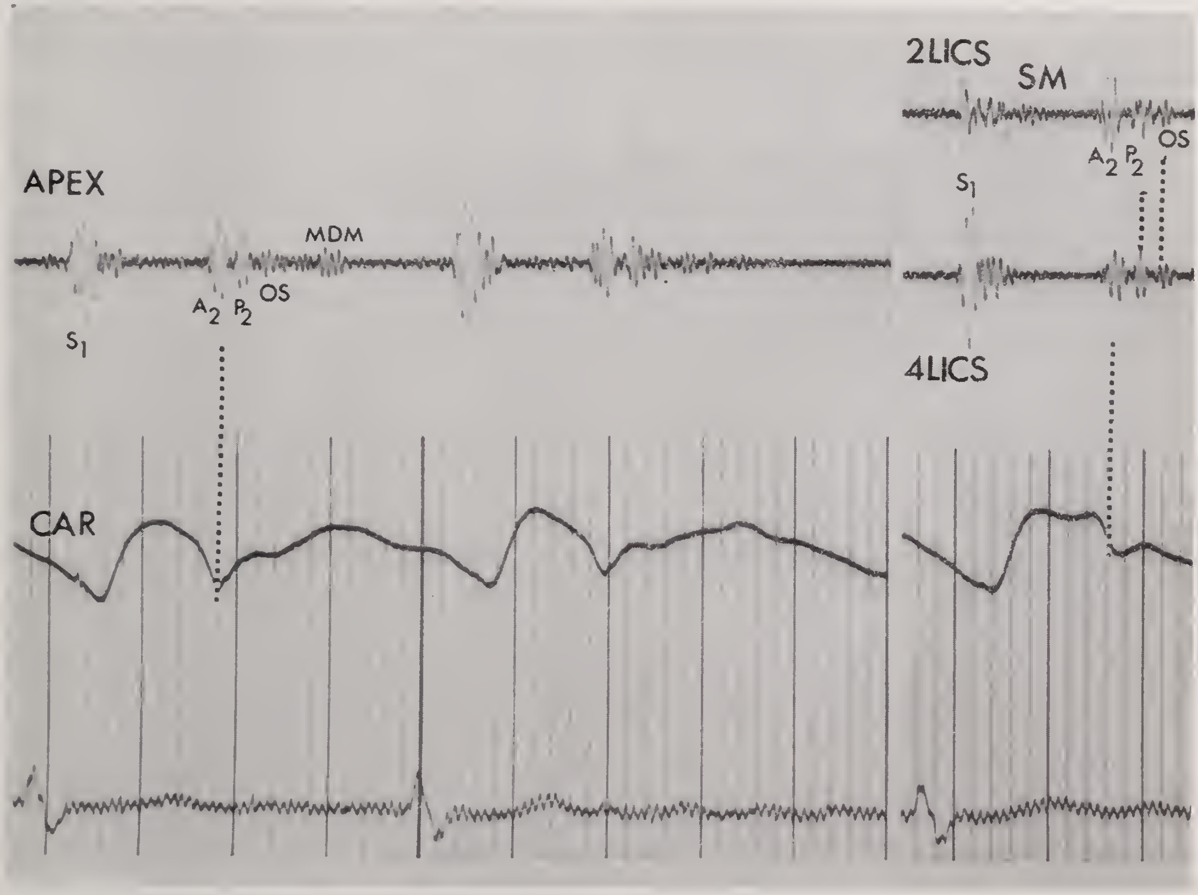

FIG. 1. Tracings from a 42-year-old woman with Lutembacher's syndrome (sinus venosus atrial septal defect and mitral stenosis confirmed at surgery). The left-to-right shunt was 2.5 to 1, the calculated mitral-orifice size 1.1 cm.^{2}, and the pulmonary arterial pressure 38/18 mm. Hg. The systemic arterial pulse (CAR) was relatively small because the left ventricular stroke volume was reduced, especially after the onset of atrial fibrillation. The phonocardiogram at the apex shows a prominent first heart sound, an opening snap (OS), and a mid-diastolic murmur (MDM). In addition, the delayed pulmonary closure sound (P_2) was transmitted to the apex, which was occupied by the right ventricle. In the second left intercostal space (2 LICS) there is a soft pulmonic systolic murmur (SM) and wide splitting of the second heart-sound followed by an opening snap (4 LICS—fourth left intercostal space).

The jugular venous pulse deserves special comment. The potentially high left-atrial pressure of mitral stenosis has a tendency to fall in the presence of a large atrial septal defect; the pressures in the 2 atria equalize and the right-atrial pulse comes to resemble the left. Although the left atrium may decompress, its mean pressure often remains higher than normal[31, 32] and relatively conspicuous A-waves of mitral stenosis occasionally persist. Since the 2 atria function as a common chamber, the height and contour exhibited by the left-atrial pulse are also found in the right atrium and in the deep jugular veins. Accordingly, Lutembacher's syndrome may be responsible for an elevated mean jugular venous pressure in the absence of right ventricular failure, and for an elevated jugular venous A-wave in the absence of pulmonary hypertension.

In Lutembacher's syndrome with large atrial septal defect the precordial impulses of the right ventricle and main pulmonary artery are likely to be particularly prominent and the left ventricular impulse particularly inconspicuous. A loud first heart-sound is occasionally felt at the apex,[16] and at times a diastolic thrill is present.[39]

Auscultation sometimes reveals a loud first heart-sound, an opening snap, and a mid-diastolic murmur with presystolic accentuation (figure 1).[16, 39] However, 2 features of Lutembacher's syndrome with large atrial septal defect are responsible for attenuating the auscultatory signs of mitral stenosis: 1. The mitral valve flow and gradient are reduced since left atrial blood seeks an alternative route across the atrial septum. Lutembacher offered a virtually identical explanation for the atypical characteristics of the diastolic rumble. 2. The classic auscultatory signs of uncomplicated mitral stenosis are best heard at the site of the left ventricular impulse; in Lutembacher's syndrome the dilated right ventricle occupies the cardiac apex so that auscultation over a left ventricular impulse may be impossible and the auscultatory features of mitral stenosis attenuated or absent. Still another point of auscultatory interest is related to the hemodynamic effect of pulmonary hypertension which has a tendency to reduce the left-to-right shunt and reciprocally increase the mitral valve flow. Under such circumstances, signs of mitral stenosis might increase, although this response is usually cancelled by further right ventricular enlargement which makes the left ventricular impulse even more remote from the chest wall.

The foregoing observations show why it is the exception rather than the rule to hear the typical combination of a loud first heart-sound, opening snap, and mid-diastolic rumble with presystolic accentuation in Lutembacher's syndrome.[6] More often than not, suspicion is aroused by 1 or more of these signs but usually not by all. In any event, the auscultatory yield is improved when the patient exercises, coughs, and turns on the left side while the bell of the stethoscope is placed as close to the apex as possible even though the left ventricular impulse may not be felt.

A number of other points deserve comment in a discussion of auscultation in Lutembacher's syndrome. Of particular interest is the continuous murmur that may originate at the site of the interatrial communication when tight mitral stenosis and high left atrial pressure result in continuous blood flow across a small atrial septal defect.[9, 20, 33] Since the continuous murmur is generated within the right atrial cavity, it is understandable that it tends to be heard best along the lower right sternal edge.[33]

In addition, the continuous murmur may increase with inspiration and diminish or vanish with Valsalva's maneuver.[33] A late rise in left atrial pressure is held responsible for the inspiratory increase, and abolition of the interatrial pressure gradient has been demonstrated when the murmur diminished during straining.[33]

When a large left-to-right shunt occurs with relatively mild mitral stenosis, the auscultatory signs resemble those of uncomplicated atrial septal defect. Under these circumstances one must determine whether the loud first heart-sound is mitral or tricuspid, whether there is a mitral opening snap or a widely split second heart-sound, or both (figure 1), and whether the mid-diastolic murmur originates across the tricuspid or mitral valve. Difficulties in making these distinctions have undoubtedly resulted in mistaken clinical diagnoses of Lutembacher's syndrome.

When the atrial septal defect is large, tight mitral stenosis substantially augments the left-to-right shunt and in so doing contributes to a particularly loud pulmonic systolic flow murmur. In addition, dilatation of the right ventricle may be accompanied by tricuspid incompetence and a holosystolic murmur that is transmitted well to the apex which is occupied by the right ventricle. It may be difficult to distinguish this murmur from that of mitral incompetence unless the tricuspid murmur gets louder with inspiration.

In uncomplicated atrial septal defect the 2 components of the second heart sound undergo either equal delays during inspiration or little or no change in timing so that the split remains fixed. This pattern occurs because flow into the right heart increases during inspiration while flow through the defect falls by an equal amount, thus augmenting left ventricular filling. In Lutembacher's syndrome right ventricular filling increases normally with inspiration, and pulmonary closure is delayed (figure 1). However, a simultaneous inspiratory increase in left ventricular filling may be prevented by the mitral stenosis. Accordingly, the aortic closure sound need not be delayed during inspiration but instead may occur earlier and the splitting actually widen.

In Lutembacher's syndrome the electrocardiogram usually resembles the tracing of uncomplicated ostium secundum atrial septal defect with left-to-right shunt (figure 2).[42] Nevertheless, differences do exist. Particular attention should be paid to the rhythm and the P waves both of which are often abnormal in Lutembacher's syndrome (figure 2). Atrial fibrillation is relatively frequent (figure 2). When sinus rhythm is present the P waves are likely to show combined atrial enlargement with a tall, broad or bifid configuration in lead 2 and a deep, prolonged terminal negative component in lead V_1 (figure 2).[4, 42] On the other hand, left atrial enlargement may be absent altogether when that chamber decompresses through a large atrial septal defect, and occasionally a qR pattern of right atrial enlargement appears in V_1 .[4, 16]

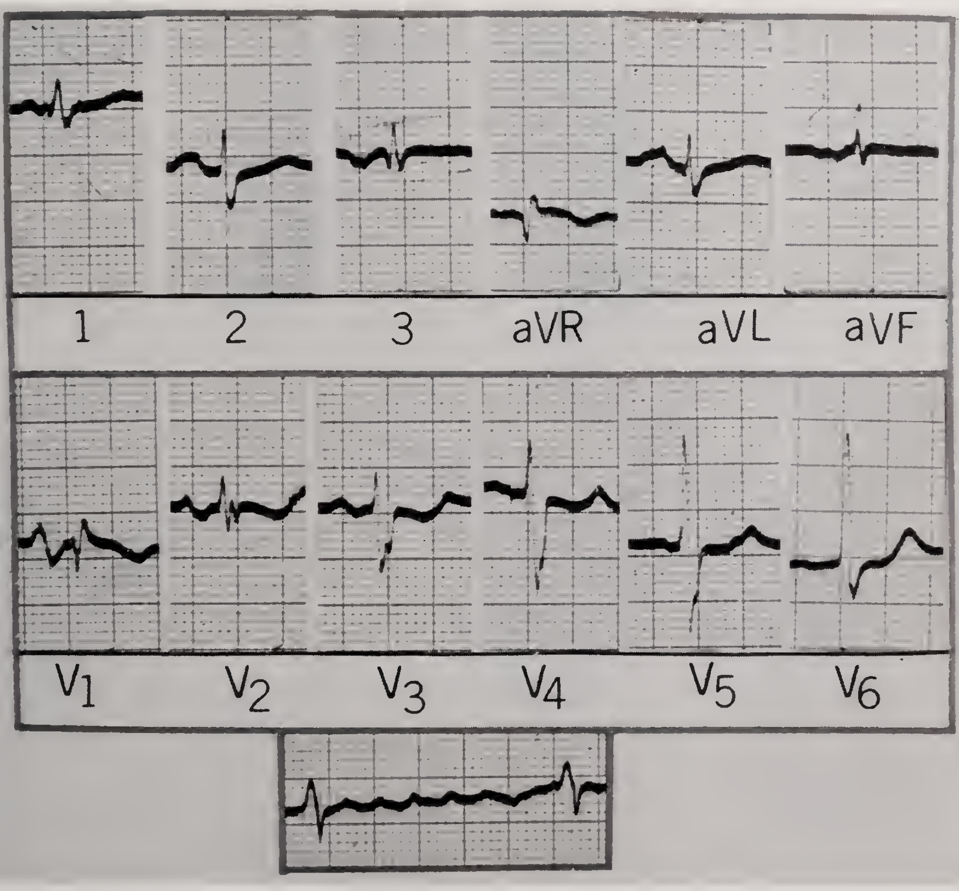

FIG. 2. Electrocardiogram of same woman. There are broad notched P waves of left atrial enlargement, especially in leads 2 and aVL, with broad deep P terminal forces in leads V_{1-2}. In addition, the direction of the P axis in the frontal plane is a point of interest since the leftward shift (inverted P waves in leads 3 and aVF) is a feature of sinus venosus atrial septal defect. The lower strip shows atrial fibrillation. The QRS pattern resembles that of an ordinary atrial septal defect; i.e., the terminal forces are slightly prolonged and are directed to the right, superior and anterior (rsr′ in V_1 , r in aVR, and broad s waves in V_6).

The frontal QRS electrical axis is directed inferiorly and usually to the right, and electrocardiographic evidence of right ventricular hypertrophy is common. Attention has also been called to the left precordial T waves which exhibit abnormalities that have been attributed to low cardiac output and a presumed decrease in coronary blood flow.[42]

When the interatrial communication is small and the mitral obstruction severe the electrocardiogram resembles that of pure tight mitral stenosis.

X-ray films in Lutembacher's syndrome show signs of pulmonary plethora but not pulmonary venous congestion. This is so because the left atrium decompresses via the defect. Similarly, radiologic evidence of left atrial enlargement is less obvious than would be anticipated for equivalent degrees of isolated mitral stenosis (figure 3); in fact, dilatation of the left atrium may be absent altogether.[12, 16, 43] At the same time, the mitral obstruction is responsible for a larger left-to-right shunt than would occur in its absence; accordingly, dilatation of the right atrium, right ventricle, and pulmonary trunk usually exceeds that seen in mitral stenosis alone (figure 3).[11, 12] Specific attention has been called to the remarkable size occasionally reached by the pulmonary trunk and its branches.[11, 43] A further point of interest is the asymmetrical increase in pulmonary blood flow that sometimes occurs. If the X-ray films exhibit pulmonary plethora confined to the right lung it is likely that mitral stenosis is ocurring with an intact atrial septum and anomalous connection of the right pulmonary veins to the right atrium.[26]

When the interatrial communication is small and the mitral obstruction severe, a different radiologic picture emerges. The X-ray appearance is more like that of mitral stenosis than atrial septal defect, including pulmonary venous congestion and left atrial enlargement.

Calcification of the mitral valve has received relatively little comment in Lutembacher's syndrome. It is not clear whether mitral calcium is infrequent or merely overlooked. In Lutembacher's syndrome with large atrial septal defect a tightly stenotic mitral valve is subjected to comparatively less pressure and turbulent flow because the left atrium decompresses through the interatrial communication. It is possible that such a valve would have a lesser tendency to calcify than the valve of isolated tight mitral stenosis.

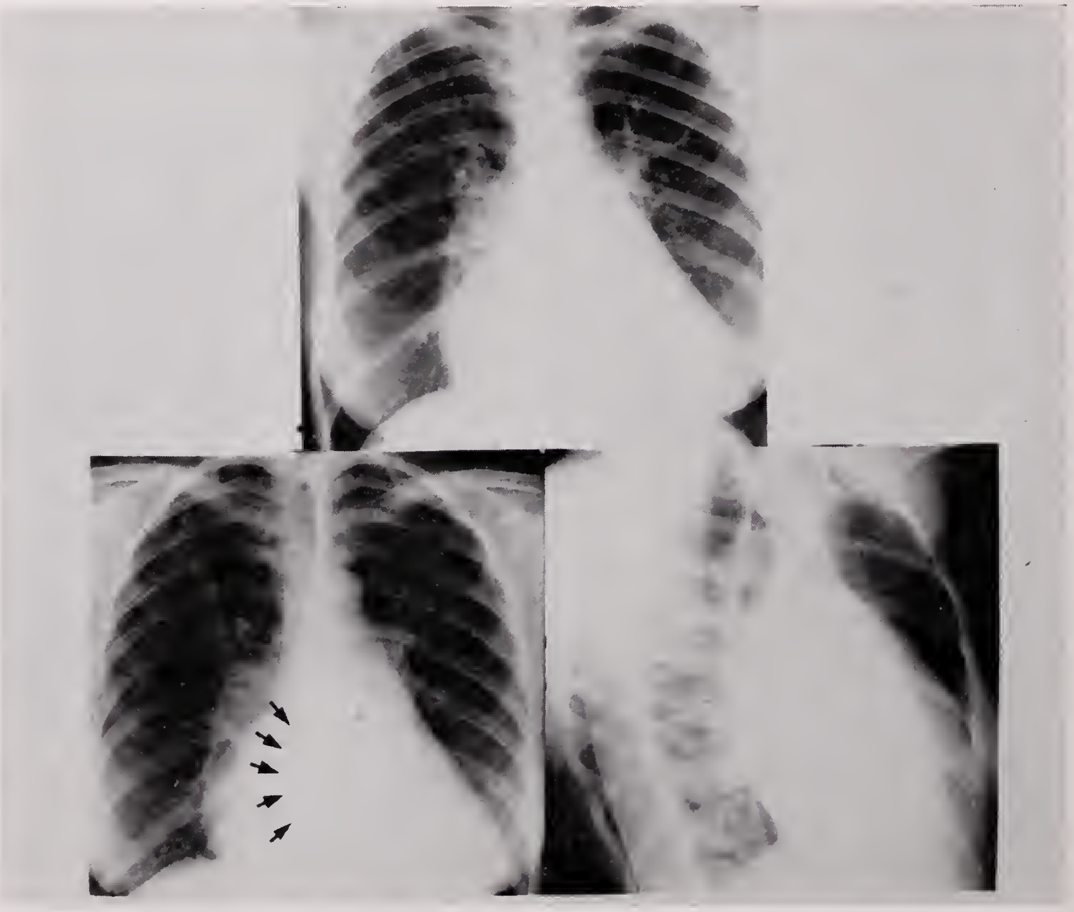

FIG. 3. The posteroanterior film of the patient shows no signs of pulmonary venous congestion. The pulmonary trunk appears only moderately prominent because it merges below with the left atrial appendage (straight left border). The pulmonary artery branches, especially the right, are prominent, and the ascending aorta is inconspicuous. The right atrium forms a prominent shadow to the right of the vertebral column, and the dilated right ventricle occupies the cardiac apex. In the frontal projection on the lower left, the barium-filled esophagus is deviated to the right (arrows) by the left atrium. The right anterior oblique projection shows only moderate retrodisplacement of the esophagus.

Summary

Lutembacher's syndrome has a predilection for females. Occasionally there is a history of rheumatic fever, but this is usually not the case. Nevertheless, the syndrome generally consists of a congenital atrial septal defect upon which acquired mitral stenosis is superimposed. Less commonly, the mitral stenosis seems to be congenital.

A large atrial septal defect has an ameliorating effect upon mitral stenosis, which in turn aggravates the hemodynamic effects of the interatrial communication. Left atrial pressure is relatively low though not necessarily normal, and symptoms of pulmonary venous congestion tend to be attenuated. Bacterial endocarditis may occur on the mitral valve. Atrial fibrillation is relatively common, and the systemic arterial pulse is small due to a decrease in left ventricular stroke volume. The jugular venous pulse may exhibit a prominent A wave in the absence of pulmonary hypertension since the left atrial pressure is transmitted into the right atrium. The right ventricular impulse tends to be especially dynamic. Auscultation only occasionally detects the tell-tale combination of a loud first heart-sound, a mid-diastolic murmur with presystolic accentuation, and an opening snap; instead, these signs of mitral stenosis are usually incomplete or absent altogether. A pulmonic systolic murmur is present because of the large right ventricular stroke volume and the large pulmonary trunk. The electrocardiogram shows P waves of combined atrial enlargement, although left atrial P waves need not occur. The QRS axis points inferiorly and to the right, and electrocardiographic evidence of right ventricular hypertrophy is common. X-ray films exhibit pulmonary plethora without pulmonary venous congestion. The right atrium and right ventricle are conspicuously dilated, and the pulmonary trunk may reach a remarkable size. Occasionally, mitral-valve calcification is seen.

Mitral stenosis with a small atrial septal defect results in a clinical picture that resembles mitral stenosis alone. Paroxysmal symptoms occur. Auscultatory signs of typical mitral stenosis are likely to be present but may coëexist with a continuous interatrial murmur maximal along the right sternal edge. The electrocardiogram usually shows left-atrial P waves, and X-ray films show pulmonary venous congestion and left-atrial enlargement.

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Hypertension and Myxedema

Case Report and a Review of the Literature*

JAMES A. RONAN, JR., M.D.,† AND ALAN M. WEINTRAUB, M.D.‡

We have become accustomed to thinking of myxedema as one of the "hypo" diseases. That is, its genesis is *hypo*thyroidism, and it is manifested by *hypo*metabolism, *hypo*thermia, a *hypo*dynamic heart, and is frequently associated with *hypo*tension. On the other hand, thyrotoxicosis is thought of as a "hyper" disease since it is caused by *hyper*thyroidism, and has manifestations of *hyper*metabolism, with *hyper*thermia, a *hyper*dynamic heart, and frequently systolic *hyper*tension. The association of *hyper*tension and *hypo*thyroidism although noted previously has not received emphasis and is not generally appreciated. The purpose of this report is to present a case illustrating this relationship and to provide information regarding the hemodynamics that occurred in the hypothyroid state, while euthyroid on thyroid replacement therapy, and when again hypothyroid after withdrawal of thyroid medication.

Report of Case

The first admission of a 37-year-old college professor to the Georgetown University Hospital was on July 23, 1963 because of hypertension, fatigue, bilateral arm swelling, and paresthesias of 2 months' duration. He had noted a 20-pound weight gain in the previous year, and his skin had become so thickened that he had difficulty clenching his fist, wearing shoes, or buttoning his collar.

He spoke with a deep voice and was mentally alert. Periorbital edema was striking. The temperature was 99.4°F rectally, the pulse rate 72 per minute, and the respiratory rate 18 per minute. The blood pressure on admission was recorded from 160/100 to 210/130 mm. Hg. The skin was dry. A brawny edema of the hands, face, and legs was seen (figure 1-A), and there was slight "pitting" over the pretibial area (figure 1-B). The thyroid gland was slightly enlarged, firm, and nodular. The optic fundi did not reveal any hypertensive changes. The cardiovascular examination was normal except for the presence of an atrial sound. Deep tendon reflexes were not pseudomyotonic. The

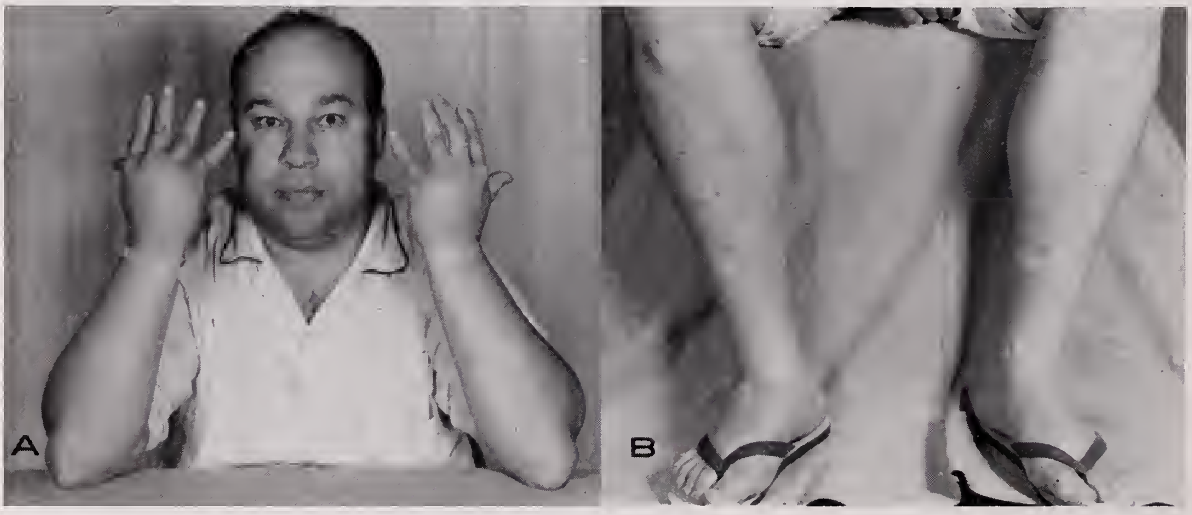

FIG. 1. A and B. July 1963—appearance prior to therapy.

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* This work was carried out during the tenure of United States Public Health Service Training Grant HE-5433 for fellowships (Dr. Ronan, trainee) and was partially supported by the Benjamin May Memorial Fund.

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remainder of the physical examination was within normal limits. Serial blood pressure determinations taken 20 times during the 5 hospital days prior to treatment averaged 154/104; 18 of the 20 determinations had diastolic pressures of 100 mm. Hg or more.

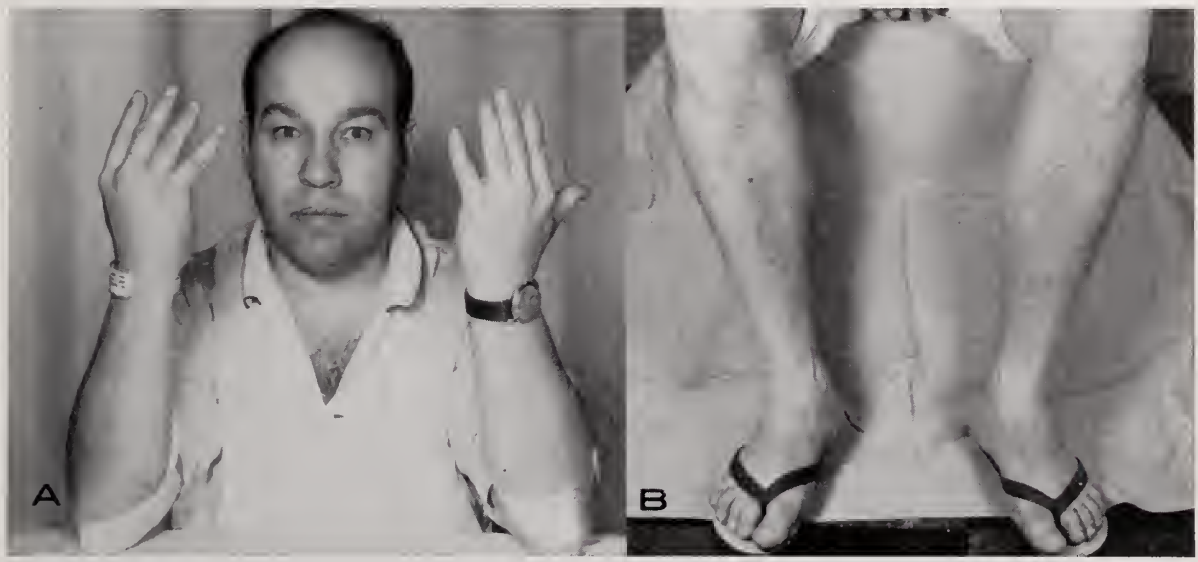

FIG. 2. A and B. December 1963—appearance after 5 months of desiccated thyroid.

The hematocrit was 45 per cent. The urinalysis was normal except for a trace of albumen. A fasting blood sugar, blood urea nitrogen, and serum electrolytes were all normal. A protein-bound iodine was 0.9 micrograms per cent (normal 3 to 7 micrograms per cent), and the radioactive iodine uptake was 11 per cent in 24 hours. A serum cholesterol was 291 mg. per cent. Chest X-ray films revealed no cardiomegaly. An intravenous pyelogram, including 1 minute, 2 minutes, 5 minutes, and delayed films, was normal. Skull films were negative. The electrocardiogram showed a first degree A-V block (PR interval, 0.22 seconds) and nonspecific T-wave flattening. A Regitine® test and 24-hour urine excretion of vanilmandelic acid were normal. The striking brawny edema of the arms suggested the possibility that the sphygmomanometric reading of the blood pressure might be falsely high. A direct arterial pressure measured through a Cournand needle in the left brachial artery was found to be 174/104 mm. Hg. Cardiac output was determined in duplicate at the same time by the dye dilution technique with injection of indocyanine green in the right antecubital vein and withdrawal from the left brachial artery. Results are listed in table 1. The patient was started on desiccated thyroid, 15 mg. daily. The dose was increased gradually over the next few months to 240 mg. daily.

On the second admission 5 months later the patient felt subjectively improved and had lost the paresthesias in his arms. His weight had decreased by 30 pounds, and the edema of his face, arms, hands and legs had cleared up (figures 2-A and 2-B). His hair and skin were still dry, and he had some fatigue.

The physical findings were unchanged except that the blood pressure had decreased to the range from 120/80 to 150/90 mm. Hg. There was also a loss of the edema of the extremities and the puffiness of his face. The serum cholesterol was 175 mg. per cent, the pro-

TABLE 1: Laboratory Data

	Myxedematous	Euthyroid on Treatment	Hypothyroid
Brachial-artery pressure.	174/104	162/78	170/98
Mean pressure mm. Hg..	130	106	128
Cardiac output—liters/minute..................	5.31	9.92	5.78
Cardiac index—liters/min./M^2 (normal 2.6–4.2)...........	2.37	4.77	2.80
Total systemic resistance —dynes sec. cm.$^{-5}$ (normal 1,300–1,800)...	1,957	855	1,771
Rate—beats/minute...	78	77	58
Mean circulation time (sec.)...........	18	14	20
Stroke volume, c.c......	68.0	128.7	99.7
Stroke volume index—c.c./M^2 (normal 30–62)........	30.4	61.9	48.4
Clinical state...	Myxedematous	Euthyroid	Hypothyroid
PBI—μg. per cent	0.9	5.0	2.1
Radioactive iodine uptake (24 hours) per cent...	11	1.2	16
Serum cholesterol—mg. per cent..	291	175	250
Rate of rise of arterial pulse—dp/dt (normal 750–1,210 mm. Hg/sec.)......	903	1,310	976

tein-bound iodine 5.0 micrograms per cent, and the radioactive iodine uptake 1.2 per cent in 24 hours. The electrocardiogram showed the PR interval to have shortened to 0.20 second and the T waves to have increased their amplitude. Direct arterial blood pressure measurements were done and revealed a drop in the blood pressure from 174/104 recorded on the first admission to 162/78. Determinations of cardiac output were repeated as before. The patient was discharged on 240 mg. of desiccated thyroid daily and continued to do well.

On the third admission 10 months after the initial admission thyroid medication was discontinued, and the patient was readmitted for evaluation 6 weeks later. He felt quite well and had none of the symptoms of hypothyroidism that were present on the initial admission. The blood pressure was 158/94 mm. Hg. The findings were unchanged from the previous admission. The protein-bound iodine was 2.1 micrograms per cent, the butanol-extractable iodide 0.6 micrograms per cent, and the radioactive iodine uptake 16 per cent in 24 hours. The serum cholesterol was 250 mg. per cent. The electrocardiogram showed PR interval prolongation to 0.22 second, but the T waves were normal. The chest X-ray appearance was unchanged. The direct arterial pressure was 170/98. The cardiac output was again measured, and the results are as shown in table 1.

Discussion

The patient was initially admitted to the hospital with unequivocal clinical and laboratory evidence of myxedema. He had both systolic and diastolic hypertension. There was no evidence of congestive heart failure. A high peripheral vascular resistance (1,957 dynes sec. cm.^{-5}), low cardiac index (2.37 liters/min./M^2), and small stroke volume index (30.4 c.c./M^2) were found. After taking thyroid medication for 5 months the peripheral vascular resistance dropped markedly (855 dynes sec. cm.^{-5}), the cardiac index increased (4.77 liters/min./M^2), and the stroke volume index doubled (61.9 c.c./M^2). The mean arterial pressure became normal, decreasing from 130 mm. Hg to 106 mm. Hg. After the desiccated thyroid was stopped for 6 weeks the peripheral vascular resistance returned to abnormally high levels (1,771 dynes sec. cm.^{-5}), while the cardiac index (2.80 liters/min./M^2) and stroke index (48.4 c.c./M^2) diminished. The rate of rise of the direct brachial arterial pulse tracing showed a striking change during the period of observation (figure 3). In the myxedematous state it was 903 mm. Hg/sec. but rose to 1,310 mm. Hg/sec. with treatment and returned to 976 mm. Hg/sec. when treatment was withheld. After the other specific etiologies of hypertension had been excluded it seemed likely that myxedema may have been related to the hypertension. When the hypertension cleared up on thyroid hormone replacement and recurred when it was discontinued, the link between hypothyroidism and hypertension seemed inescapable.

The cardiovascular literature does not emphasize the association between myxedema and hypertension, and recent texts and reviews on hypertension do not include myxedema among the possible etiologies of hypertension.[1-5] Even though endocrinologists[6, 7] have been aware of this association it is really not a widely appreciated combination. A recent textbook of endocrinology[8] has stated that whether myxedema may be responsible for hypertension "is in need of further study."

The true incidence of hypertension in myxedema is difficult to estimate, but it is probably an infrequent occurrence. In a review of 123 patients with myxedema hypertension was not listed as one of the features of the disease.[9, 10] In fact, hypotension was present in 14 per cent of a series of myxedematous patients.[10]

The occurrence of hypertension in myxedema was first reported sporadically in a few case studies beginning 40 years ago.[11, 12, 13] Some of the patients discussed became normotensive with thyroid therapy.[12, 13] Emphasis was first directed to this combination by Lerman, Clark and Means[14, 15] in 1933 and 1934 when they reported a total of 45 patients with myxedema, of whom 22 were hypertensive. Following adequate thyroid therapy 10 became normotensive and 6 patients became less hypertensive. Since then only occasional reports in the literature have referred to this combination. A recent report by Barnes,[16] however, has shown that hypertension was far more prevalent in a group of 509 goiter patients than it was in a similar group without goiter, and he inferred that hypothyroidism may have been the cause of the hypertension. Additional recent evidence of the association of these entities is seen in patients who develop a hypothyroid state following radioactive iodine administration for Graves' disease and consistently develop diastolic hypertension which responds well to moderate doses of thyroid.[17]

Hemodynamic studies which have been carried out in myxedema have primarily been concerned with alterations in cardiac output and not with changes in arterial blood pressure.[18-21] In 29 cases of myxedema that had cardiac catheterization studies, only 4 were found to be hypertensive.[18-21] The only one of those 4 patients who was adequately treated for myxedema and recatheterized showed no significant changes after treatment.[20]

Our patient had not been hypertensive until he became myxedematous, and subsequently he was consistently normotensive when euthyroid and hypertensive when hypothyroid. It seems likely, then, that there is a correlation between the hypothyroidism and hypertension. The mechanism of this hypertension is speculative. Previous studies have shown that in myxedema there is decreased peripheral blood flow and increased peripheral vascular resistance.[18-21] It has been proposed that, because body metabolism in myxedema is low, peripheral vasoconstriction occurs to maintain body heat.[22, 23] An alternative explanation may be that the deposition of mucinous edema in interstitial spaces interferes with capillary blood flow and raises peripheral resistance.

The level of mean arterial blood pressure is regulated by cardiac output and peripheral vascular resistance. In myxedema the peripheral resistance increases and cardiac output decreases, usually to such a degree that they counterbalance each other and there is no net change in arterial blood pressure.[18-21] In our patient the increased peripheral resistance exceeded the decreasing cardiac output so that hypertension resulted.

Many present-day hypertensive evaluations routinely include the tests to rule out some relatively uncommon causes of hypertension such as pheochromocytoma, primary aldosteronism, Cushing's syndrome, and renal-artery disease. It is important to keep in mind that myxedema is another treatable cause of hypertension. The diagnosis is relatively straightforward and the treatment both simple and effective.

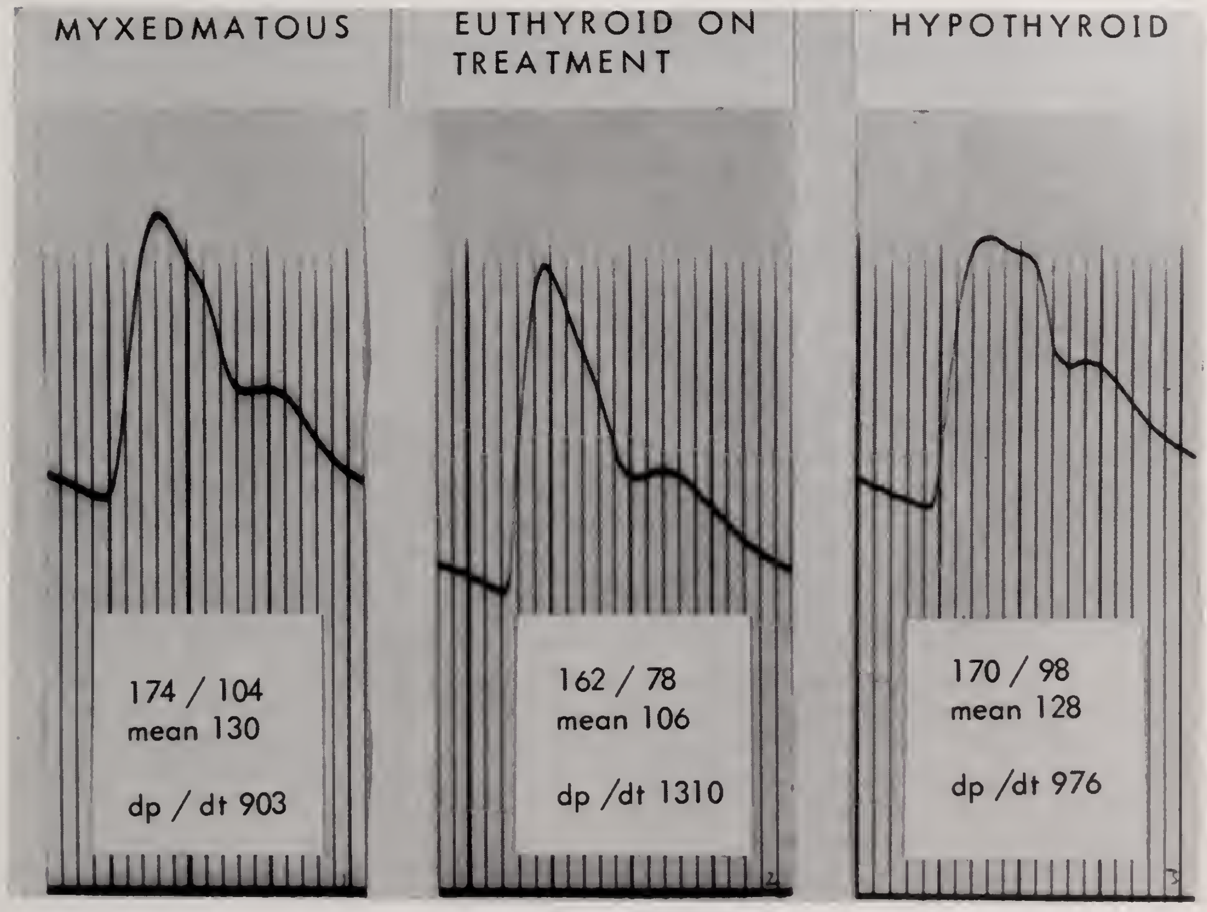

FIG. 3. Brachial arterial pressure tracings with mean arterial pressure and rate of rise of arterial pressure (dp/dt). Note decrease in blood pressure to normotensive levels and increase in rate of rise of arterial pressure during euthyroidism.

Summary

A patient has been presented who developed hypertension when he was myxedematous, became normotensive when euthyroid, and then reverted back to a hypertensive state when thyroid therapy was withheld. Hemodynamic studies demonstrated that an elevated peripheral resistance was the dominant feature in producing the hypertension. It is important to keep in mind that myxedema is a treatable cause of hypertension.

(*Continued on page 98*)

Plasma Digitoxin Levels in a Patient on Oral Therapy

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CHEMICAL METHODS for measuring glycoside concentrations lack the necessary sensitivity for use in measuring the concentration of plasma glycosides.[1-5] A similar position applied to biological assay methods using the chick or duck embryo heart,[6-9] but the discovery of the effect of minute amounts of cardiac glycosides on membrane transport of ions made possible a biological assay technique considerably more sensitive than previously known.[10] This method is based on the inhibition of the uptake of potassium by red blood cells in the presence of digitalis glycosides, and by measuring the uptake of radioactive rubidium (^{86}Rb) instead of potassium, the technique becomes sensitive enough for the estimation of glycosides in plasma.[10-13] Recently other methods have become available for the determination of minute amounts of digitoxin in plasma, and these are based on the double isotope dilution technique[14] or a radio-immunoassay method.[15]

This paper is concerned with serial plasma determinations of digitoxin concentration in a patient on routine oral digitoxin therapy using the radiobiological assay technique of Lowenstein.[10] An attempt has been made to correlate plasma levels with the influence on the electrocardiogram and the occurrence of toxic side-effects. Although preliminary results on maximum plasma digitoxin levels in patients have been published elsewhere,[16] this work is still continuing at the present time.

Methods

Venous blood was collected at 6 o'clock each morning, and the plasma was removed after centrifugation and stored at −20°C until assayed. Digitoxin was given in a dose of 0.1 mg. orally 3 times a day. Lead 2 of the electrocardiogram was taken daily, and subjective symptoms were recorded by the nursing staff. Prior therapy with oral digoxin was stopped 6 days before the study.

Digitoxin in low concentrations will inhibit the uptake of ^{86}Rb by human red blood cells. A series of known concentrations of digitoxin were made in human plasma, and these, together with the unknown plasmas, were extracted in identical fashion.[12] Saline, glucose, adenine sulphate and ^{86}rubidium chloride were added to each extract and incubated at 37°C. A suspension of group O rhesus-positive human red blood cells was added to each tube and incubated. During the incubation period each tube was counted in a well-type scintillation counter (Ekco type N664B) fitted with a thallium-activated sodium iodide crystal (Ekco N579A). At the end of the incubation period the tubes were placed in ice and the erythrocytes washed and recounted. The ratio of the radioactivity initially present in each tube to the amount present after incubation and washing when multiplied by 100 is taken as the percentage ^{86}Rb uptake. The percentage ^{86}Rb uptake obtained when no cardiac glycoside is present is assumed to be equivalent to 100 per cent uptake. Since the controls and unknown samples are extracted in identical fashion there is no necessity to correct for the efficiency of the extraction procedure. A calibration curve is constructed and the concentration of digitoxin in the patient's plasma determined from this.

Results

Mrs. E. B., a 63-year-old woman, was seen with atrial fibrillation and dyspnea 1 year before this study and after complete clinical evaluation was considered to have ischemic heart disease. The atrial fibrillation was adequately controlled by oral digoxin 0.25 mg. daily without diuretics. On admission she was taken off her oral digoxin, and a week later a control plasma sample was taken which contained 0 mμg. digitoxin/ml., and her QRS rate was 109 per minute. She was started on oral digitoxin 0.1 mg. 3 times a day, and after 6 days the plasma level had reached 10 mμg. digi-

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toxin/ml. with a QRS rate of 88 per minute. The maximum digitoxin level reached was 38–40 mμg./ml. on days 16 and 17 with a QRS rate of 55–67 per minute. After 21 days when the heart rate was down to 54 per minute the oral digitoxin was stopped and the heart rate remained below 70 for 5 more days, but 9 days after stopping the glycoside the heart rate had reached the control level again. These results are summarized in table 1, although the daily fluctuations in plasma digitoxin levels can be seen better in figure 1. There were no subjective symptoms of digitalis toxicity even when the heart rate was down to 54 per minute nor any ECG evidence of toxicity.

TABLE 1: Plasma Digitoxin Level and Heart Rate

Day	Plasma Digitoxin (mμg./ml.)	QRS Rate (per minute)
0	0	109
6	10	88
10	20	86
15	24	83
17	38	67
20	30	57
21	28	54
	Digitoxin stopped	
26	18	63
28	6	70
30	12	115
38	2	118

Discussion

There is a close correlation between the plasma digitoxin levels and the slowing of the heart rate in this patient with atrial fibrillation due to ischemic heart disease. Clinically satisfactory digitalization was achieved with a plasma digitoxin level of about 20 mμg./ml., which is in accord with others who found adequate digitalization when plasma digitoxin levels were 5–40 mμg./ml.[15] and 10–50 mμg./ml.[14] Using the ^{86}Rb assay method Lowenstein and Corrill[10] found a plasma digitoxin level of 10–50 mμg./ml. (average 25 mμg./ml.) in patients maintained on oral digitoxin. There is no information available on the daily plasma digitoxin levels in patients starting or stopping digitoxin, and no ECG correlation is noted in the literature.

The gradual increase in plasma digitoxin level and presumably consequent slowing of the heart rate agree with the well-known clinical observations of the slow rate with which adequate digitalization can be achieved with digitoxin,[17] and in this patient about 12 days were needed. There were no subjective side-effects, such as nausea or vomiting, even when the heart rate was down to 54 per min., and there were no ECG changes of digitalis toxicity. Nausea due to digitoxin correlates poorly with plasma digitoxin level. In one group of patients nauseated by the glycoside the average plasma level was 54 mμg. digitoxin/ml. while in another

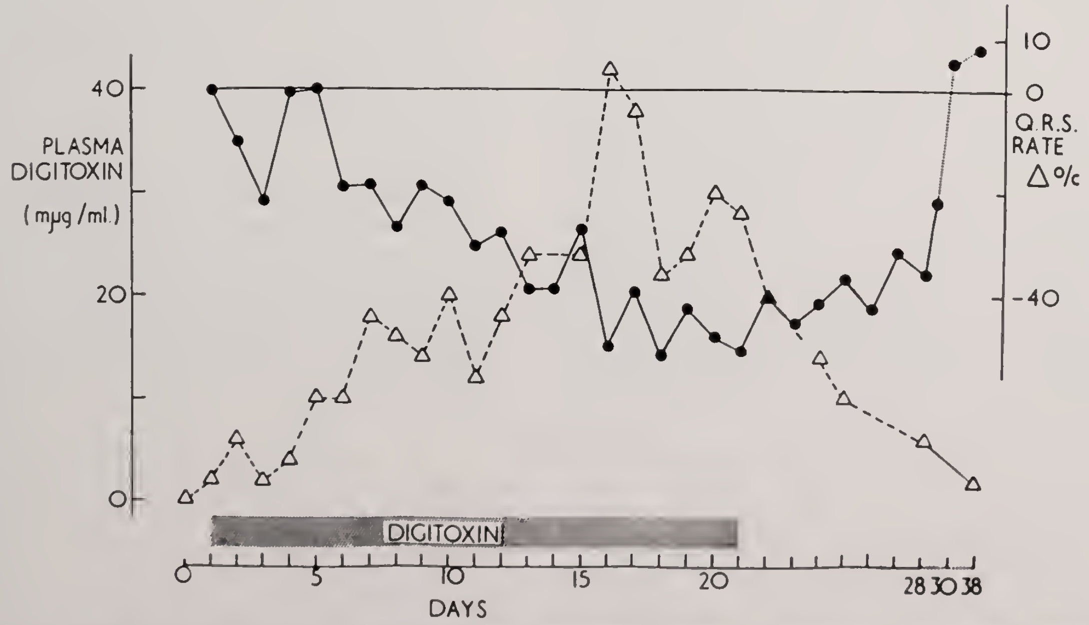

FIG. 1. Daily plasma digitoxin concentrations correlated with the percentage change in heart rate from control values in a 63-year-old woman with atrial fibrillation due to ischemic heart disease. The daily dose of digitoxin was 0.1 mg. t.i.d. orally.

group without nausea it was 52.5 mμg. digitoxin/ml.[18] The presence or absence of nausea and vomiting appears to be more an individual idiosyncrasy rather than to be related to the concentration of digitoxin in plasma.

Although with digitoxin there would appear to be a relationship between plasma levels and myocardial effect this is not so with digoxin where adequate digitalization occurs with plasma levels which can only just be measured.[12] The effect of digitalis glycosides on the heart ultimately depends on the accumulation of the drug in the myocardial cells, and a high level of digoxin has been shown to be present in the heart even though the plasma levels are very low.[12] Adequate digitalization with digoxin and digitoxin is achieved with plasma glycoside levels differing by an order of magnitude, and this must be due to the efficiency with which the myocardium can accumulate the drug from the plasma. This, in turn, is presumably due to the firmness with which these 2 glycosides are bound to plasma constituents. Kuschinsky[19] showed that digitoxin is very strongly bound to plasma proteins while digoxin is less firmly attached; as long as the glycoside is bound to plasma proteins it is ineffective pharmacologically. Although Kuschinsky's work was done on isolated animal tissue, the same situation appears to apply to the human myocardium, judging by the relationship between clinical effect and plasma digoxin or digitoxin level.

After adequate digitalization has been achieved and digitoxin therapy has been stopped, several days elapse before the control heart rate is reestablished. It would appear that digitoxin, once bound to the myocardium, is only slowly removed from the pharmacologically active binding sites in the myocardial cells. Although plasma glycoside levels are closely related to heart rate, i.e., myocardial effect, in the case of digitoxin, this is not an essential feature with other glycosides like digoxin. It is the myocardial tissue level of glycoside which determines its effect, and in the case of digitoxin it is fortuitous that plasma levels and myocardial action are so closely related. However, because of this relationship it is possible to tell whether a patient is properly digitalized from plasma digitoxin levels, and this could be useful in differentiating under- from overdigitalization, which can sometimes be of importance clinically.

Summary

Serial plasma digitoxin estimations were made on a patient with atrial fibrillation due to myocardial ischemia. Although there is a good correlation between plasma digitoxin level and myocardial effect as regards heart rate, this is considered to be fortuitous in the case of digitoxin. However, this association could be used to determine whether any particular patient has received too much or too little digitoxin during therapy.

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Myocarditis: The Role of Infectious and Immune Factors

The Effects on the Heart of Homologous Antigen from Guinea Pigs Previously Infected with an Enterovirus*

C. VERNON SANDERS, M.D., F.A.C.P.†

THERE ARE VALID clinical observations which strongly suggest that some forms of human pericarditis and myocarditis are the result of infectious and immune factors. This is particularly true of the inflammatory changes which occur within the heart following a well-delineated viral illness. The association has been predominantly with the enterovirus and, more specifically, the 6 sera types of the Coxsackie B.[1]

In the adult infection the clinical evidence suggests that the virus itself does not directly damage the myocardium but rather in some way alters the normal immune mechanism and sets into play a self-sustaining, self-destructive process. Evidence for such an underlying immunologic event includes a lag phase between infection and the later development of heart disease, the inability to isolate the virus directly from the heart, and the observation that a very trivial infection may result in profound involvement of the heart. These are not unlike the essential features of poststreptococcal rheumatic carditis.[2]

Clinical observation and emperical evidence would indicate that acute inflammatory disease may evolve into a chronic form of heart disease. In fact, a portion of those patients with primary myocardial disease of the idiopathic type probably represent examples of chronic, "burned out" myocarditis.[3] The recent demonstration of "mark bodies" in 7 patients with idiopathic disease of the myocardium lends credence to an infectious immune concept.[4] The position is further strengthened by the demonstration of bound gamma globulin in the hearts of patients with primary myocardial disease of the idiopathic type.[5]

This experiment was designed to test the assumption that the virus may in some way alter the antigenic structure of the myofiber and set into play an injurious antigen-antibody reaction. Furthermore, it was designed to test the clinical observation that acute inflammatory disease may progress into a chronic form of myocarditis.

Materials and Methods

Fifty guinea pigs (at least 3 months old) were utilized in the first phase of the study. There were 36 males and 14 females. By random selection 20 guinea pigs were selected and 5 c.c. of blood was removed from the femoral artery of each. The blood was immediately spun at 600 rpm for 1 hour. The sera were removed and frozen in sterile containers at −30°C. The 50 guinea pigs were then injected with 0.2 c.c. of a 1:1 solution of Coxsackie B-3 virus intraperitoneally. The titer of virus was 7.0, expressed as $\log_{10}$ TCD_{50} per mm. This represents approximately 1 million virus particles injected into each guinea pig.

The animals were sacrificed at the end of 4 weeks. Drugs had not been used. Cardiac blood was drawn and convalescent sera obtained and frozen as previously described. A portion of the heart along with a specimen of liver and lung were sent to the pathology laboratory in 10 per cent formalin. A portion of heart was also put into a 1-ounce bottle to be used as "antigen." A third portion was placed in a sterile cap vial containing Hanks Balance salt solution (pH 7.2) and frozen, to be used later for virus isolation.

Twenty guinea-pig heart specimens were tested by virus isolation procedures; the other heart specimens remained frozen. Each specimen tested was thawed, weighed, and homogenized with 9 parts of Hanks Balance salt solution containing 0.5 per cent gelatin, 100 units per ml. of penicillin and 100 gamma per ml. of streptomycin in a Tenbroeck tissue grinder. The homogenate was centrifuged at 1,000 rpm for 10 minutes and the sediment discarded, then 0.2 mm. of the supernatant was inoculated into each of 2 rhesus mon-

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* This study was done at Ferst Research Laboratory, Piedmont Hospital, Atlanta, Ga., and was supported by a grant from the Georgia Heart Association.

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key renal-cell roller cultures. The cultures were inoculated at 33°C on a rotating drum and examined for cytopathic effects at 5- to 7-day intervals for 18 to 21 days. One blind passage in rhesus monkey renal-cell cultures was made at 7 days.

Neutralizing antibody for Coxsackie virus type B-3 was determined on each of the 19 pairs of guinea-pig sera received. Strain 201933 of Coxsackie virus type B-3 was employed as test virus; it was obtained through Dr. Maurice Mufson and passed twice in monkey renal cells.

All sera were inactivated at 56°C for 30 minutes. Virus-serum mixtures were inoculated at 37°C for 1 hour and 0.2 mm. of the mixture inoculated into each of 2 rhesus monkey renal-cell roller cultures. The cultures were incubated at 33°C on stationary racks and examined for cytopathic effects 4, 5, 6, and 10 days later. Acute sera were tested at a 1:2 dilution and convalescent sera at 1:2 and 1:8 dilutions against 10 TCD_{50} of virus.

A parallel control was run on 20 guinea pigs from the same lot. Seven received a 0.2 c.c. injection of normal saline; 13 received 0.2 c.c. of tissue culture material. Two animals in the control tissue-cell group were sacrificed after sustaining a broken leg, each having caught it in the wire mesh of the cage floor. One animal in the control saline group died of an apparent respiratory infection.

Animals receiving the virus were kept in separate cages. Animals receiving tissue-cell material and normal saline were kept in small groups (all were females) but in a separate room from the animals receiving the Coxsackie virus.

Phase 2 of the study was performed with 65 guinea pigs from a homogeneous lot. There were 42 females and 23 males. Only 1 weighed less than 225 Gm. The animals were separated into 4 groups: 9 guinea pigs served as controls; 22 guinea pigs received "infected" antigen alone; 22 guinea pigs received "infected" antigen plus adjuvant; and 12 guinea pigs received "tissue" antigen.

Antigen was prepared fresh on the day of injection in the following manner: Guinea-pig hearts taken during phase 1 of the study and frozen were thawed, trimmed free of connective tissue, and placed in buffered saline at a pH of 7.2. The tissue was minced and then ground by hand. The suspension was spun at 3,000 rpm for 1 hour. The supernatant was discarded. The sediment was resuspended, diluted with buffered saline. The tissue was kept cool throughout the procedure.

A protein determination by the Kjeldahl microdistillation technique was made on each batch of antigen, a prescribed amount of antigen being injected (a total of 40–47 mg. per animal).

Three injection periods were used; the second followed the first by 1 week, and the third followed the second by 2 weeks. Approximately half the antigen was given during the first injection. The animals receiving "infected" antigen plus adjuvant received 0.5 c.c. adjuvant combined with antigen on the first injection day and 0.25 c.c. of adjuvant combined with antigen on the second injection day. No adjuvant was included on the third injection day. Antigen and adjuvant were agitated by hand until a homogenous suspension was obtained.

Approximately one-third of the animals were sacrificed 4 weeks after the first injection, one-third approximately were sacrificed 6 weeks after the first injecton, and the remaining third was allowed to survive for approximately 4 months from the time of the initial injection.

Meticulous care was given to the diet and maintenance of the animals. Each received a fresh daily supply of guinea-pig chow which contained ascorbic acid. Each was given fresh water and either a yellow or green vegetable daily. The cages were cleaned and sterilized prior to the introduction of the animals at the beginning of the study. Guinea pigs remained isolated throughout the length of the study in a constant room temperature with adequate circulation.

Homologous antigen alone was not given. This group had been included in an earlier study which in its entirety serves as an additional control to this entire project.[6]

At the time of sacrifice (head trauma) several separate and generous portions of the myocardium (both right and left ventricles) were sent to the pathology laboratory for routine H and E staining procedures. Masson stains were obtained on selected specimens. Other tissues, including liver, lymph nodes, and skeletal muscle (diaphragm), were also obtained for random H and E study. A portion of myocardium was frozen for fluorescent antibody study.

Fluorescein antibody studies were performed by the direct technique of Kaplan.[7] Heart tissue was cut at 4 microns within the cryostat and stained with anti-guinea pig gamma globulin. Control studies included staining of similar tissue with fluorescein-labeled mouse gamma globulin. Sections were fixed with acetone and the slides mounted with buffered glycerin. The conjugate had been previously absorbed with bovine liver powder and centrifuged at 10,000 rpm. A Zweiss® microscope with appropriate filter and light source was used.

Results

During phase 1 all guinea pigs remained well, gained weight, and appeared healthy at the time of autopsy. There was one exception: An animal died unexpectedly 8 days after the inoculum of the Coxsackie B-3 virus. Microscopic examination of the heart was normal. The remainder of the myocardium was discarded.

Virus recovery was attempted on 20 guinea pigs selected at random. All specimens were tested negative. Due to random selection, animal no. 49 was omitted. Because of the high convalescent antibody titer, virus isolation from the heart muscle of this animal was performed at a later date. No virus recovery was obtained.

Coxsackie B-3 virus infectivity was achieved and demonstrated with a rise in convalescent titer in 6 of 19 pairs of guinea-pig sera tested.

H and E sections of myocardium from the virus-infected guinea pigs were examined along with the "saline-injected" and "tissue-injected" controls. No morphologic changes within the heart were found.

During phase 2 of the study 5 animals died unexpectedly. Four of these (80A, 77A, 58AA, 92AA) were among the group that demonstrated reactionary changes within the myocardium. The time of death occurred at 16 days, 18 days, 7 weeks, and 10 weeks after the first injection was made.

Guinea pigs sacrificed after 4 weeks and 6 weeks respectively appeared healthy and well. The animal receiving infected antigen and adjuvant had developed skin lesions at the site of subcutaneous injections, but each was healed or was in the process of healing.

Twenty-two animals were sacrificed at the end of 4 months. All animals appeared healthy with 4 exceptions (119C, 115A, 113T, 116AA).

TABLE 1: Summary of Findings in Eleven Guinea Pigs

Animal	Age at Sacrifice	Weight Change Gm.	Pregnancy	Fluorescent Antibody Studies	Pathology
80A	2½ wks. (died)	−170 (332)	Yes	Unavailable	Intense subendocardial reaction; focal pericardial + focal endocardial thickening; perivascular granuloma; focal round-cell collections
58AA	2½ wks. (died)	+53 (325)	No	Unavailable	Intense subendocardial reaction
66AA	4 wks.	+135 (363)	No	Negative	Intense subendocardial reaction; papillary muscle disease; focal pericardial thickening
77A	7 wks. (died)		Yes	Unavailable	Generalized myocardial involvement; pulmonary infarction and effusion
92AA	10½ wks. (died)	+134 (360)	No	Unavailable	Intense subendocardial reaction; focal pericardial thickening; papillary muscle disease
104AA	4 months	+432 (794)	No	Positive	Intense subendocardial reaction; papillary muscle disease; isolated collections of mononuclear cells; focal pericardial thickening
91AA	4 months	+554 (735)	No	Unavailable	Organized granuloma lesion—perivascular; moderate subendocardial reaction
105A	4 months	+613 (839)	No	Positive	Moderate subendocardial reaction; organized granuloma lesion, perivascular; focal endocardial reaction
109T	4 months	+106 (650)	Yes	Negative	Intense subendocardial reaction; striking connective tissue proliferation
113T	4 months	−69 (566)	Yes	Negative	Organized granuloma lesion; focal pericardial reaction
120T	4 months	+45 (952)	No	Positive	Diffuse thickened, opaque pericardium. Heart weight heavy? Hypertrophy

Pregnancy and delivery had occurred in 4 animals during the 4-month waiting period. Four additional animals were pregnant at the time of autopsy. One animal (80A) was pregnant at the beginning of the study and delivered 4 days after the first injection. One animal (77A) died at 10 weeks and was found to be pregnant at autopsy.

Myocardial changes were found in 3 animals during the acute phase of the study, in 2 during the intermediate phase of the study (died between sacrifice periods), and in 6 during the final or chronic phase of the study. The pathologic descriptions of these hearts are included in table 1 along with other relevant information.

The salient site of reaction was consistently in the subendocardial areas (figures 1 and 2). Focal endocardial lesions were common. Focal pericardial thickening was noted in several instances. In one guinea pig the entire pericardium was replaced by a thickened, opaque, fibrous sheath.

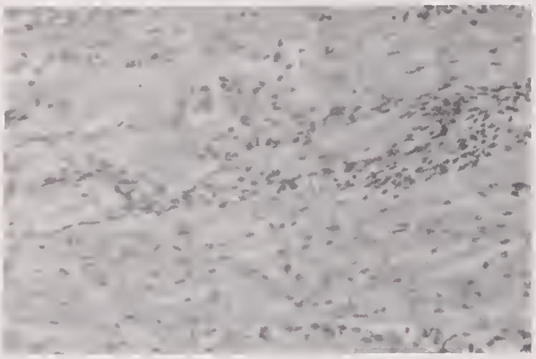

FIG. 1. 66-AA. Center of photograph is filled by an intense cellular reaction consisting of mononuclear cells and Anitschkow myocytes. Lower half of photograph shows relatively well-preserved cardiac muscle. In upper half muscle fibers are fragmented and show vacuolization. Some remnants of the myofiber appear more eosinophilic, suggesting necrosis.

The reaction itself consisted of a profuse cellular mixture of mononuclear cells and large cells resembling the Anitschkow myocyte (figures 3 and 4). These cells contained a large pale basophilic nucleus with chromatin speckled throughout in a heterogeneous fashion. In some instances the chromatin material has a "corkscrew" or "caterpillar" appearance. When cut tangentially it appeared as the "owl-eye" cell (figure 5).

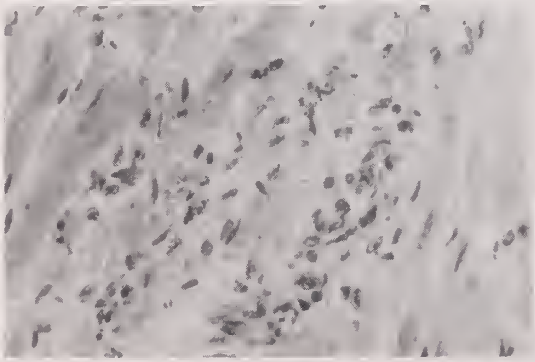

FIG. 3. 92-AA. An intense subendocardial reaction consisting of mononuclear cells with deeply basophilic nuclei and Anitschkow myocytes. Disruption and fragmentation of myofibers are apparent. Note also variation in eosinophilic quality of muscle fiber. Swelling of connective tissue and dilated capillaries are also noted.

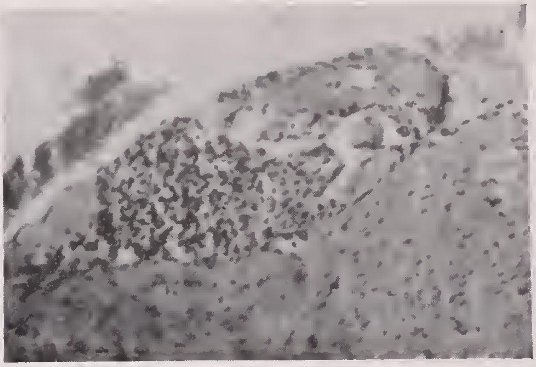

FIG. 2. 66-AA. A papillary muscle showing almost complete replacement by a cellular infiltrate consisting primarily of mononuclear cells.

In the area of cellular reaction, fragmentation and disruption of the myofiber occurred. Swelling and vacuolization were often seen within the myofiber before its complete disruption. In some in-

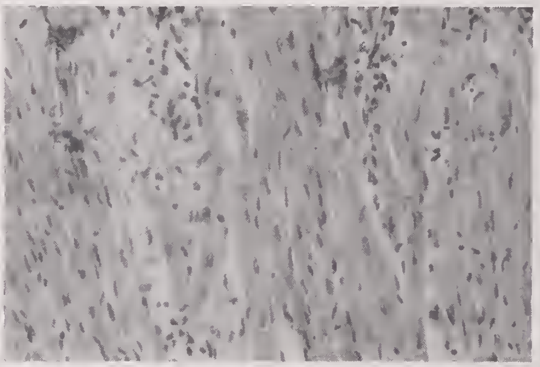

FIG. 4. 58-AA. Subendocardial reaction consisting of mononuclear cells and Anitschkow myocytes. Edema and proliferation of connective tissue are noted. Swelling, disruption and fragmentation of myofibers are again seen.

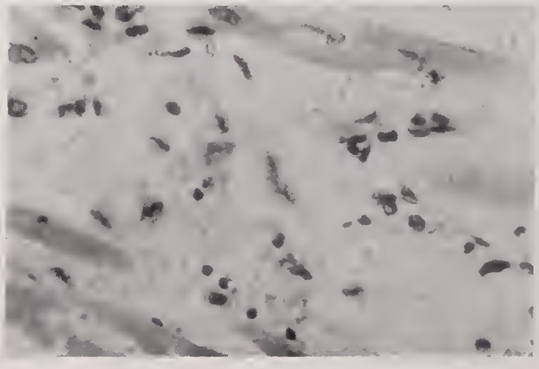

FIG. 5. 77-A. Close-up of typical cellular reaction. Note "caterpillar"-like nucleus in Anitschkow myocyte as seen in center of photograph. At least 10 mononuclear cells are evident in this small field alone. Connective tissue meshwork has a shredded appearance. Note striations in fragmented muscle fibers.

stances fragments contained eosinophilic material suggestive of necrosis. In these areas there was edema of loose wavy connective tissue. Some connective-tissue proliferation could be demonstrated with the Masson stain (figure 6).

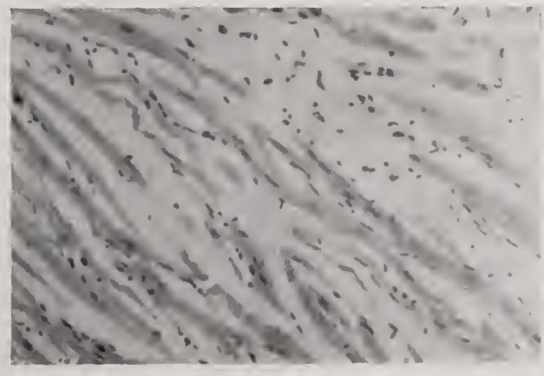

FIG. 6. 77-A. Generalized myocardial reaction consisting of cellular infiltration characterized by the mononuclear cell and Anitschkow myocyte with marked alteration in individual muscle fibers, characterized by swelling, disruption, fragmentation, and, in some instances, atrophy. Edema of connective tissue is also apparent.

A distinguishing feature of the chronic group was a granuloma-like lesion, more organized and more clearly delineated (figure 7). Its contiguous relationship to vascular structures in several instances is of particular interest (figure 8). The mononuclear reaction contained cells with deeply basophilic nuclear material and there was striking variation in the size of the cells (figure 9). Focal endocardial thickening was common (figure 10).

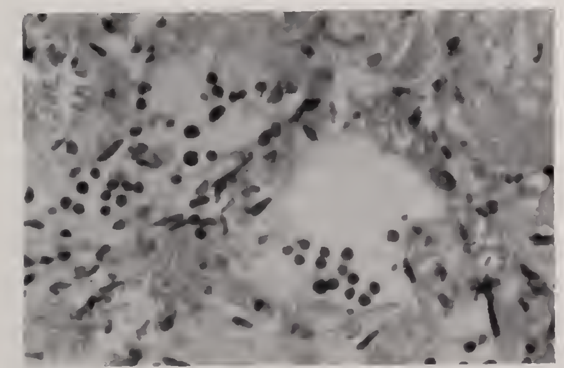

FIG. 9. 104-AA. A focal collection of mononuclear cells. Note deeply-staining basophilic nuclei. Note also the variation in size of mononuclear cells and their relationship to vascular structures.

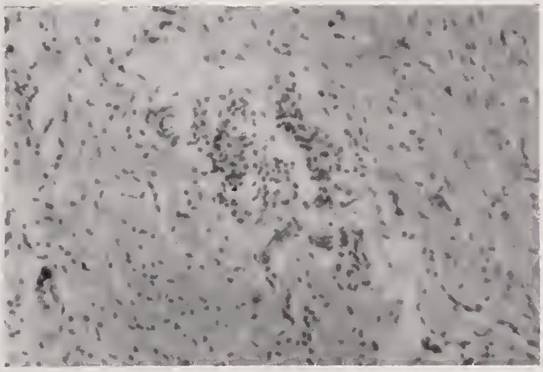

FIG. 7. 91-AA. A well-organized granuloma-like lesion, consisting of mononuclear cells and Anitschkow myocytes. Note adjacent artery and edematous appearance of contiguous connective tissue.

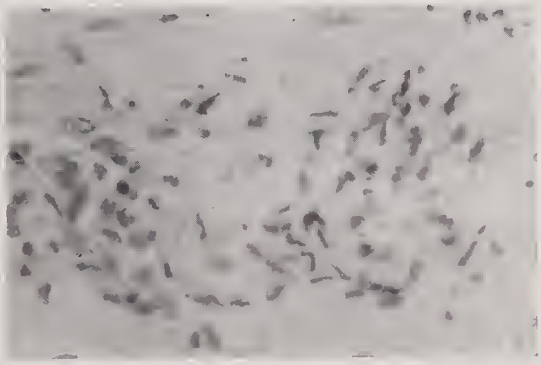

FIG. 8. 105-A. A focal perivascular granulomatous reaction.

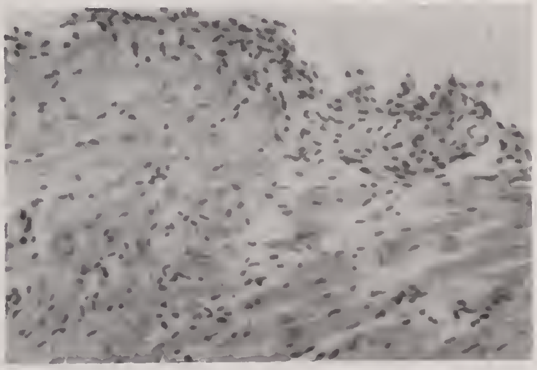

FIG. 10. 105-A. Focal endocardial proliferation with mild subendocardial reaction.

Fluorescent antibody studies were performed on the hearts of 40 animals. Five animals from the "positive" group were not available for FA study. More nonspecific fluorescent staining was observed than in studies with labeled anti-human gamma globulin. Four animals contained fluorescent material exceeding criteria set for the nonspecific staining; 3 of these animals demonstrated chronic granuloma by conventional techniques. These results were duplicated by means of a fresh supply of anti-guinea pig gamma globulin. Control studies with anti-mouse gamma globulin were negative.

The site of predilection for fluorescent material was at the level of the sarcolemmic membrane smudging into the myofiber.

Discussion

It is generally accepted that certain viruses can injure the heart. Members of the enterovirus family, particularly the Coxsackie B virus, have been most frequently incriminated. The mechanism of injury remains obscure. Death in the newborn secondary to acute inflammatory disease of the heart would appear to be due to the direct toxic effect of the virus. The adult response is different, and clinical observation would suggest that immune mechanisms are involved. In fact, its characteristics are quite similar to those seen in poststreptococcal rheumatic carditis.

Evidence for a hypersensitivity mechanism includes the following:

1. There is a lag phase between the initial clinical infection and the development of myocardial and/or pericardial involvement.
2. A very mild infection of the respiratory or gastrointestinal system may result in profound inflammatory changes within the heart.
3. The hypersensitivity setting ("some get it, some don't") has been noted in human disease and in experimental animals.
4. There is inability to recover the virus from hearts of patients dying with overwhelming or secondary disease.[1]

Although the infectious-immune theory has strong clinical support, the exact mechanism is unclear. There are several ways in which the virus of the infectious agent may initiate or participate in an auto-immune reaction.

The virus in some way may alter the normal antigenic nature of the myofiber with the resultant production of antiheart antibodies, which in turn initiate an injurious reaction within the heart.[8] There are other alternative theories, and these include the production of a cross-reacting antibody between the infecting agent and some portion of the myocardial cell as has been proposed in the pathogeneses of poststreptococcal rheumatic fever[9]; the production of a haptene in which the viral agent or a portion of it combines with a component of the myofiber, resulting in antibody production to the haptene complex[10]; and the release of secluded antigenic material following injury by the virus as has been proposed in auto-immune thyroiditis.[10]

An experiment was designed to test the validity of the "altered antigen" theory. The primary objective was to see if one could produce inflammatory changes within the heart of the guinea pig by first altering antigen through the inoculation of the Coxsackie B-3 virus.

Several objections to the auto-immune disease theory which have been raised in the past have been overcome in this experimental design. It has been contended that one cannot expect an antibody response unless antigenic material is transported to and exposed to antibody-producing organs. With the introduction intraperitoneally of antigenic stimulus adequate exposure to antibody-producing systems was obtained.

A second objection is that antibody to foreign protein (homologous material) will not necessarily react with unaltered material. This objection has been supported by the fact that no disease has been produced in the experimental animal by the transfer of serum-containing antibodies. However, it has been held for some time that the viral-induced changes represent hypersensitivity of the delayed type (viral immunity is probably a form of delayed hypersensitivity) and that circulating antiheart antibodies represent only an expression of injury and have no role in the causation of the disease. On the other hand, several disease states have been produced in animals by the passive transfer of lymphoid material, including experimental encephalitis.[11]

In an earlier preliminary study with 50 guinea pigs only unaltered antigen (homologous heart) and/or adjuvant was used. One animal, pregnant, and receiving both antigen and adjuvant, developed inflammatory changes compatible with myocarditis.[6]

During the acute and intermediate phases of this study 5 animals developed changes consistent with an inflammatory process within the heart. These results would suggest that by altering the antigenic stimulus one is more apt to elicit a deleterious reaction within the guinea-pig heart.

The characteristics of the injurious process were stereotyped and reproducible. A granuloma-like reaction occurred, consisting of mononuclear cells with deeply staining basophilic nuclei and large cells that resembled Anitschkow myocytes. The cellular reaction occurred amid muscle fibers that demonstrated swelling, vacuolization, fragmentation, disruption, and, in some instances, necrosis. Edema separated the involved muscle fibers, and proliferation of connective tissue could be demonstrated by special staining techniques.

The paucity of polymorphonuclear leukocytes would mitigate against an acute infectious process. The predominating cell types, namely, the mononuclear cell and the Anitschkow myocyte, lend strong support to the assumption that hypersensitivity plays a role in the pathogenetic process.

The origin of the Anitschkow myocyte is ambiguous. These may be remnants of disrupted muscle fibers or they may be histiocytes which have migrated into an area of injury. The morphologic appearance of the nuclear structure is similar to that of the nucleus within the intact myofiber. The staining quality of the nucleus and the arrangement of the chromatin material is also similar. In favor of the invading histiocyte is the observation that in some of the granulomatous reactions there are many more cells than could be accounted for on the basis of individual muscle-fiber disruption alone. For the present at least final judgment on their origin must be held in abeyance.

One of the most intriguing and enigmatic disorders of the heart is that categorized as "primary myocardial disease." It is far more common than was once thought. Its clinical and pathologic features are well known, and it is no longer able to masquerade under the guise of arteriosclerotic or rheumatic heart disease. All the clinical and histologic features have been well described. Its etiology remains obscure. It is generally conceded that at least a portion of these represent chronic examples of infectious myocarditis.[12]

Clinical observations support the position that an acute infectious process can progress to a chronic form of the disease. Emperical evidence would also suggest that certain cases may lie dormant with marginal cardiac performance until some other process, e.g., atrial fibrillation and pulmonary emboli, superimposes itself. This may occur years after the initial insult.[13]

An analogous process is seen in rheumatic heart disease. Furthermore, it is unreasonable to assume that the beta hemolytic streptococcus is the only infectious agent which can initiate an infectious-immune mechanism that results in chronic myocardial disease. The recent demonstration of bound gamma globulin in the hearts of patients with primary myocardial disease would support such a concept.[5]

To further strengthen this position an attempt was made to reproduce chronic myocardial disease in the experimental animal. Through an "altered antigen" approach with the Coxsackie B-3 virus plus the initial stimulus, 6 animals, allowed to survive 4 months, had healed or resolving lesions. The changes consisted of a well-organized and well-delineated granuloma-like lesion which included numerous mononuclear cells and Anitschkow myocytes. A contiguous relationship to vascular structures is of special interest since a striking analogy exists in several instances to the Aschoff body.

Noteworthy is the fact that 3 of the animals which showed chronic changes had not received antigen from the virus-infected material but rather from a parallel control study given tissue-cell culture media alone. It should be noted that a PPLO organism was isolated from the tissue-cell material. These findings suggest that the "altered antigen" may occur with factors other than the virus alone.

Although the clinical and pathologic features of primary myocardial disease are similar it is unlikely that there is a single etiologic agent which can be incriminated. Nevertheless, it is highly probable that infectious-immune factors are responsible for a portion of these cases. The "altered antigen" theory would take into account other than infectious agents as "modifying" or "sensitizing" factors, alcohol, toxins, pregnancy, and other infectious agents, clinically suspect in the past, as playing a role in some cases of primary myocardial disease.

Summary and Conclusions

Infectivity was demonstrated in the guinea pig following the inoculation of the Coxsackie B-3 virus.

Virus recovery could not be achieved from the heart of the guinea pig at the time of sacrifice.

No demonstrable lesions were noted microscopically in the virus-infected animals.

The hearts from virus-infected guinea pigs were used as the "altered antigen" material.

In 5 instances acute inflammatory changes were found, consisting of infiltration of mononuclear cells and Anitschkow myocytes. The inflammatory reaction was characterized by swelling, vacuolization, and fragmentation of the myofibers in the reactive areas. Edema of loose connective tissue was also apparent.

The subendocardial area was most frequently involved. Focal endocardial and focal pericardial changes were noted.

The presence of lesions in animals allowed to survive (6 animals) for 4 months is of particular interest and lends credence to the concept that primary myocardial disease of the idiopathic type in humans may be the residual of an infectious-immune process.

These results also suggest that the virus may be

(*Continued on page 98*)

Cardiac Auscultation in Pregnancy*

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AND ALLAN C. BLEICH, M.D.§

NUMEROUS STUDIES have been reported concerning the management or prognosis of heart disease in pregancy, but little attention has been given to the auscultatory changes associated with pregnancy. There are only 2 systematic studies of the auscultatory changes that accompany gestation in women without heart disease[1, 2] and no comparable studies in patients with congenital or rheumatic heart disease.

Recently, we have examined 25 women with murmurs of aortic regurgitation and/or mitral regurgitation while pregnant and not pregnant to determine if there were any changes in these murmurs due to the altered circulatory hemodynamics of pregnancy.[3] Others[4] have observed the effect of pregnancy on the systolic murmur of muscular subaortic stenosis. This communication is based on these findings as well as on a review of the literature. The auscultatory changes to be anticipated during pregnancy will be described, in patients without heart disease and in patients with rheumatic heart disease.

Patients without Heart Disease

First heart sound. Clinical and phonocardiographic observations during pregnancy show an increase in intensity and an exaggerated splitting of the first heart sound.[1] Both begin in the twelfth to twentieth week of gestation and return to normal during the second to fourth week postpartum.

Second heart sound. There is normal splitting of the aortic and pulmonic components of the second heart sound with the pulmonic component increased in intensity. The increased intensity of the pulmonic component occurs despite a normal pulmonary artery pressure and has been attributed to the increased stroke volume and heart rate which have been documented during pregnancy.[5, 6]

Third heart sound (ventricular diastolic gallop). The physiologic third heart sound which occurs during rapid ventricular filling is frequently present in patients under the age of 30. However, the third heart sound increases in intensity and is even more frequent during pregnancy. Eighty to 90 per cent of pregnant women have a loud third heart sound, and in 60 per cent of these patients it develops before the twentieth week of pregnancy.[1] The increased frequency and intensity of the third heart sound may be explained by the increase in diastolic filling that accompanies the increase in stroke-volume during pregnancy.

Fourth heart sound (atrial sound). The atrial sound, which is produced in the ventricle at the time of atrial contraction, is also present in some normal patients during pregnancy. Cutforth and MacDonald[1] recorded an atrial sound in 8 of 50 patients followed with frequent phonocardiograms during gestation. However, the atrial sound was present on auscultation in only 2 of these 8 patients. In all cases it was absent on phonocardiograms taken postpartum. One of the authors (R.O'R.) has observed the presence of an atrial sound, documented by phonocardiogram, in 2 patients during pregnancy. Both patients had severe anemia during pregnancy, and in both cases the atrial sound disappeared following delivery. The presence of an atrial sound in the pregnant patient without heart disease may be due to the high cardiac output and the resultant increase in ventricular filling during atrial contraction. The atrial sound has been observed in patients with other high cardiac-output states such as anemia, peripheral arteriovenous fistula, and thyrotoxicosis, even in the absence of heart disease.[7]

Systolic murmurs. A systolic murmur is present in 90 to 96 per cent of patients during pregnancy.[1, 2] This murmur is usually ejection in character, less than Grade III in intensity, and has been attributed to increased blood flow across the pulmonic or aortic valves. Another systolic murmur frequently evident during pregnancy is the innocent supraclavicular arterial murmur which is heard maximally in the supraclavicular fossa and over the carotid vessels but may be transmitted to the upper precordium. The majority of systolic murmurs present during gestation disappear or decrease in intensity shortly after delivery.

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Diastolic murmurs. Diastolic murmurs are generally absent during pregnancy. However, 2 types of diastolic murmurs have been described during gestation. Nine of 50 normal primigravida patients followed by Cutforth and MacDonald[1] had low-frequency diastolic murmurs heard best at the left sternal border. In the phonocardiogram these murmurs did not begin immediately after the second heart sound and were maximal in mid-diastole. The authors[1] attribute these murmurs to increased flow across the tricuspid valve. In 2 of these patients the murmur increased with inspiration.

Other observers[2, 8] have reported a high-frequency, early diastolic murmur during pregnancy which is maximal over the pulmonic area and disappears following delivery. They attribute this murmur to a functional dilatation of the pulmonary artery during gestation.

Continuous murmurs. The cervical venous hum, a continuous bruit in the neck, is frequent during pregnancy as it is in other high-output states. It is produced by increased velocity of blood flow in the jugular veins and may radiate to the upper precordium, causing an incorrect impression of organic heart disease.

Extracardiac murmurs (mammary soufflé) may develop during the last trimester or during the postpartum period. These extracardiac murmurs may be either systolic or continuous and are most commonly heard over the right or left second intercostal space 1 or 2 cm. from the sternal edge. These murmurs can usually be obliterated by firm pressure with the stethoscope over the appropriate intercostal space.

There is controversy concerning the origin of breast murmurs in pregnancy. Tabatznik and associates[9] attribute both systolic and continuous murmurs to an arterial origin, but Hurst and associates[10] believe that the systolic murmurs originate in the mammary arteries and the continuous murmurs in the veins.

Patients with Organic Heart Disease

Obstetric patients are frequently referred for cardiac consultation because of a history of rheumatic fever or the presence of a significant cardiac murmur prior to the onset of pregnancy. It is important to diagnose valvular heart disease in the pregnant patient not only for prevention and management of congestive heart failure and its consequences but also because of the hazard of bacterial endocarditis occurring at the time of delivery. It has been taught in the past that ". . . organic heart disease may usually be excluded in the absence of a diastolic murmur, unequivocal cardiomegaly, a systolic murmur more than Grade II intensity, and severe arrhythmia."[11]

However, a recent report by us[3] that the murmurs of aortic and mitral regurgitation may diminish in intensity or even disappear during pregnancy has significant diagnostic and therapeutic implications. In this study 25 women with the murmurs of aortic or mitral regurgitation, singly or in combination, were examined during pregnancy as well as when they were not pregnant. The aortic regurgitation murmur decreased or became inaudible in 10 patients, remained unchanged in 4, and increased in 1. The mitral regurgitation murmur decreased or became inaudible in 9 patients and was unchanged in 4. Three of the patients who did not show a decrease in the intensity of the mitral or aortic regurgitation murmur and the patient whose murmur increased during pregnancy had the appearance or persistence of systemic hypertension during pregnancy. Intravenous phenylephrine consistently increased the loudness of the murmurs, usually to the level present in the nonpregnant state. The diminished intensity of these murmurs may be related to the decrease in systemic vascular resistance known to occur during pregnancy.[5, 6, 12] It is apparent that (1) aortic regurgitation or mitral regurgitation may be missed during pregnancy, since these murmurs may become inaudible, and (2) the severity of these cardiac lesions may be underestimated clinically because of the decrease in intensity of these murmurs during pregnancy. In these patients particular attention must be given to examinations made prior to pregnancy. This study also suggests the importance of examining patients postpartum before stating that the patient has no auscultatory evidence of heart disease. If there is any question as to the presence of aortic or mitral regurgitation during pregnancy the physician can inject phenylephrine intravenously and listen immediately following infusion for these murmurs. If valvular heart disease is present or there is a history of an organic murmur prior to pregnancy the physician should prescribe antibiotic prophylaxis at the time of delivery and for several days thereafter.

Three of the patients followed by us had apical diastolic rumbling murmurs heard only during pregnancy. This finding was interpreted as indicating the presence of mitral stenosis. None of these subjects was thought to have sufficient mitral regurgitation to account for the presence of a diastolic flow murmur or sufficient aortic regurgitation to have an associated Austin-Flint murmur. These observations are not surprising since even in mild asymptomatic mitral stenosis there is usually an increase in the intensity of the diastolic or presystolic murmur during pregnancy.[13] This is due to the increase in volume and rate of blood flow across the mitral valve during gestation.

One patient observed in this study had tricuspid regurgitation. This diagnosis was based on the finding of a systolic murmur heard best at the lower left sternal border. Before pregnancy this murmur was Grade I/VI and increased to Grade II/VI with inspiration and also with amyl nitrite inhalation. During pregnancy it was Grade II/VI during expiration and increased to Grade IV/VI during inspiration. This observation in one patient suggests that the murmur of tricuspid regurgitation may become louder during pregnancy as it does during the inhalation of amyl nitrite because of the increased blood flow and reduced systemic vascular resistance that accompany pregnancy.

Hypertrophic subaortic stenosis or primary myocardial disease with muscular obstruction to left ventricular outflow is being recognized clinically with increased frequency. The obstruction to left ventricular outflow increases in severity during increased left-ventricular contractility or reduced central blood volume, and the systolic murmur of subaortic stenosis increases during the intravenous administration of isoproterenol and during amyl nitrite inhalation.[14, 15]

During pregnancy the increase in cardiac output and the decrease in systemic vascular resistance would be anticipated to increase the systolic murmur of subaortic stenosis. However, the increase in central blood volume present during pregnancy would be anticipated to decrease the same murmur. Observations made during pregnancy in 2 patients with documented subaortic stenosis by the obstetrics and cardiology services at Duke University suggest that this systolic murmur actually diminishes during pregnancy.

Next to rheumatic heart disease the most common cause of cardiac complications during pregnancy is congenital heart disease. Frequently the diagnosis of congenital heart disease is made first during pregnancy when many patients come under careful medical observation for the first time. However, the auscultatory changes occurring during pregnancy in patients with congenital heart disease are poorly documented and require further elucidation.

Summary

The cardiac auscultatory findings during pregnancy in both normal patients and those with rheumatic heart disease have been presented.

The murmurs of aortic and mitral regurgitation may decrease during pregnancy because of the decrease in systemic vascular resistance which accompanies gestation. Aortic or mitral regurgitation may be missed during pregnancy since these murmurs may become inaudible, and the severity of these cardiac lesions may be underestimated clinically because of the decrease in the intensity of these murmurs. It is important to determine the existence of valvular heart disease during pregnancy, not only for the prevention and management of congestive heart failure but also because of the hazard of bacterial endocarditis during parturition and the need for prophylactic antibiotic therapy.

Acknowledgments are made to W. Proctor Harvey, M.D., for instructing the authors in the art and science of cardiac auscultation and to Mrs. Karen Thompson for secretarial assistance.

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The Clinical Significance of the Atrial Sound

ROBERT A. O'ROURKE, M.D.*

THE AUDIBLE ATRIAL SOUND (fourth heart sound) is a low-frequency sound produced in the ventricle during the ventricular filling associated with atrial contraction.[1, 2] The atrial sound has been attributed to both transient reclosure of the atrioventricular valves[3, 4] and to ventricular wall vibrations.[5, 6] This presystolic sound differs from the earlier, low-frequency sound produced in the atrium which is usually inaudible.[7] The fourth heart sound may occur in either right- or left-ventricular disease.

Causes

Right-sided atrial sounds are frequently present in patients with right-ventricular hypertrophy secondary to pulmonary stenosis, primary pulmonary hypertension, or pulmonary hypertension due to mitral stenosis, cor pulmonale, pulmonary embolism, or left ventricular failure. They are commonly accompanied by a prominent "a" wave in the jugular venous pulse and a right-ventricular lift (figure 1).[8, 9] These low-frequency sounds are heard best at the left sternal border and often increase in intensity during inspiration.

Left-sided fourth heart sounds are commonly present in patients with hypertension, aortic stenosis, myocardiopathies, coronary-artery disease, and acute mitral insufficiency.[10-15] Most patients with an acute myocardial infarction who are in sinus rhythm have a prominent atrial sound.[16]

Left-sided atrial sounds are frequently accompanied by visible and palpable presystolic distention of the left ventricle and on the phonocardiogram are coincident with the presystolic "a" wave of the apexcardiogram (figure 2).[17] On auscultation the left-sided atrial sound is best heard at the left ventricular apex with the patient in the left lateral position. This presystolic sound is usually most prominent during the expiratory phase of respiration.

Determining Factors

The presence of an atrial sound is usually dependent on 3 factors: (1) effective atrial contraction, (2) unimpeded ventricular filling, and (3) diminished ventricular compliance.[12, 15, 18]

The atrial sound is not present during atrial fibrillation and may be absent in patients with severe myocardial disease for several days following the return to sinus rhythm.[19, 20] The atrial sound may be absent in patients with severe right- or left-ventricular disease when ineffective atrial contraction is present despite sinus rhythm, such as may occur with atrial ischemia, fibrosis, or infarction. An atrial sound may appear in these patients during the improvement in atrial function and cardiac output which accompanies digitalis therapy.[16, 21]

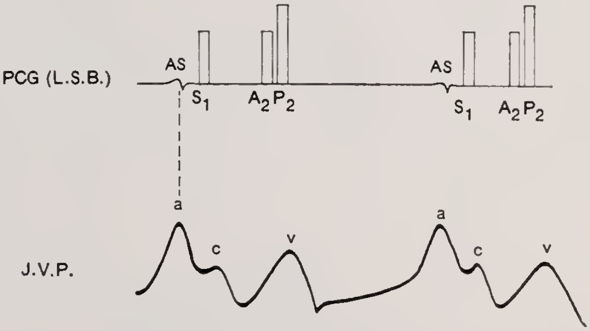

FIG. 1. Schematic representation of the phonocardiogram (PCG) and the jugular venous pulse (JVP) in a patient with pulmonary hypertension. PCG at the left sternal border (LSB) shows a loud atrial sound (AS) which is accompanied by a prominent presystolic "a" wave in the JVP. The pulmonic component (P_2) of the second heart sound is increased in intensity.

The atrial sound is usually absent during the diminished ventricular filling associated with moderate to severe atrioventricular valve stenosis and is also usually absent in constrictive pericarditis.[22]

The atrial sound generally signifies reduced ventricular distensibility[12, 15] and is frequently but not always associated with an increase in ventricular end-diastolic pressure.[12, 17] However, the atrial sound may also be present in high cardiac-output states when there is increased filling of the normally compliant ventricle.[3, 23, 24]

An atrial sound frequently accompanies delayed atrioventricular conduction even in the absence of clinically detectable heart disease.[7, 25] The incidence of an audible fourth heart sound in patients without clinical evidence of heart disease increases with increasing age.[26] Whether or not the occurrence of an atrial sound in these patients represents underlying disease of the myocardium is unsettled.

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Timing

The fourth heart sound has been noted on phonocardiograms to increase in amplitude and the fourth heart sound-first heart sound interval to lengthen as a result of an increase in ventricular filling, a prolongation of atrioventricular conduction, or a decrease in left ventricular compliance.[3, 6, 24, 25] Kincaid-Smith and Barlow[7] have documented a decrease in the atrial sound-first heart sound interval in hypertensive patients as their blood pressure decreases with medical therapy and in patients recovering from acute myocardial infarction. This observation has been confirmed by Hill and associates[16] but appears discordant with the findings of Braunwald and Frahm[27] that the time interval between the peak "a" wave of the left-ventricular pressure curve and the onset of ventricular contraction tends to decrease as left ventricular end-diastolic pressure increases.

There is actually no disparity in these observations. The atrial sound and the presystolic "a" wave of the apexcardiogram occur with the left ventricular "a" wave but not necessarily at its peak. As left ventricular end-diastolic pressure increases, the atrial sound and the presystolic wave of the apexcardiogram occur earlier and frequently coincide with the upslope of the left ventricular "a" wave rather than its peak (figure 2).[17] This increase in the atrial sound-first heart sound interval is due primarily to an earlier timing of the presystolic sound (atrial sound-Q wave interval prolonged) rather than to delayed onset of the first heart sound (Q wave-first heart sound interval prolonged), although both may occur.[20]

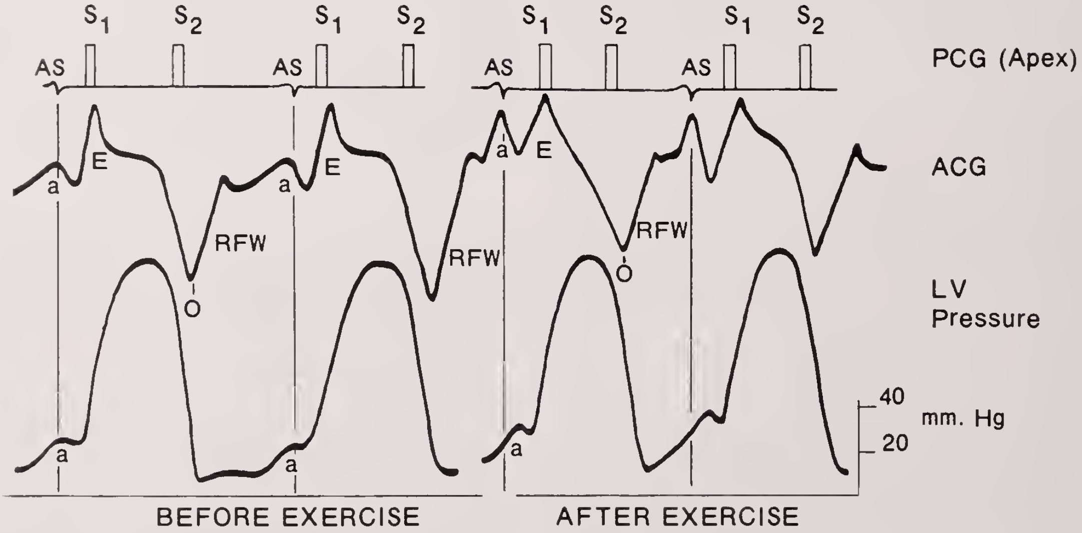

FIG. 2. Schematic representation of the apical phonocardiogram (PCG), apex-cardiogram (ACG), and left-ventricular pressure tracing (LVPT) in a 50-year-old man with arteriosclerotic heart disease at rest and during exercise. At rest the atrial sound (AS) and the "a" wave of the ACG coincide with the "a" wave of the LVPT. During exercise there is an increase in the left ventricular end-diastolic pressure (mm. Hg), and the AS and "a" wave of the ACG now coincide with the upslope of the left ventricular presytolic "a" wave. On ACG: "a," presystolic wave; E, systolic ejection phase; O, opening of mitral valve; RFW, rapid filling wave.

Conclusions

The presence of an atrial sound on cardiac auscultation is often helpful in making a diagnosis of heart disease. The absence of a fourth heart sound in a patient complaining of chest pain and in sinus rhythm makes the diagnosis of acute myocardial infarction less likely.[16] I have not yet seen a patient with coronary artery disease and a positive ECG exercise test who did not have an atrial sound on the phonocardiogram at rest or during supine exercise.

The presence of a fourth heart sound is also valuable in estimating the severity of cardiac disease, particularly in patients with aortic-valve stenosis.[10] In the absence of associated coronary artery disease the presence of an atrial sound in these patients is correlated with moderate to severe aortic-valve obstruction and a pressure gradient across the valve of usually greater than 70 mm. Hg.

However, a fourth heart sound may be present in patients with otherwise no clinical evidence of heart disease, particularly in the elderly. The significance of this presystolic sound in these patients needs further definition.

Summary

The audible atrial sound is produced in the ventricle during the ventricular filling associated with atrial contraction. It may be present in patients with either right- or left-ventricular disease.

The presence of an atrial sound is usually dependent on 3 factors: (1) effective atrial contraction, (2) unimpeded ventricular filling, and (3) diminished ventricular compliance.

The atrial sound and the presystolic "a" wave of the apexcardiogram occur with the "a" wave of the left-ventricular pressure tracing but not necessarily at its peak. With a marked elevation in left ventricular end-diastolic pressure, the fourth heart sound-first heart sound interval lengthens and the atrial sound occurs during the upslope of the left ventricular "a" wave rather than at its peak.

The significance of an atrial sound in patients with otherwise no clinical evidence of cardiac disease requires further definition.

Acknowledgments are made to W. Proctor Harvey, M.D., for teaching the author the value of careful cardiac auscultation and to Mrs. Karen Thompson for secretarial assistance in preparation of this manuscript.

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Reach-to-Recovery Program

The Reach-to-Recovery program of the American Cancer Society is a rehabilitation program for women who have had radical breast surgery and is designed to help them meet their psychologic, physical, and cosmetic needs.

The program was originated by Mrs. Terese Lasser, of New York City, in 1953 with funds made available by her late husband, J. K. Lasser, and it is today supported by the American Cancer Society. A manual, carefully and compassionately written by Mrs. Lasser, who underwent a radical mastectomy herself, has been endorsed by many outstanding surgeons who perform this surgery.

Only with the authorization of the attending doctor and with the informed consent of the patient will a Reach-to-Recovery volunteer visit a patient in the hospital. At this time the volunteer leaves a booklet with the patient and gives information on exercises (demonstrations), suggestions for bra comfort, explanation of various prostheses, and suggestions for clothing adjustment.

One of the most important parts of the program is the education of personnel responsible for the comfort of the radical mastectomy patient. This phase takes the form of lectures and demonstrations to nursing schools of large hospitals, staff physicians, medical students, graduate and undergraduate nurses, social service workers, and any interested personnel.

Requests for this service should be made to the District of Columbia Division, American Cancer Society, Volunteer Coördinator, through the Division's Service Department: telephone 659-2760.

Hypertension and Myxedema—Ronan and Weintraub

(*Continued from page 81*)

We are indebted to Dr. Frank I. Marcus, formerly Chief of Cardiology, Georgetown University Medical Division of the District of Columbia General Hospital, now Chief of Cardiology at the University of Arizona College of Medicine, for his advice in this work.

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Myocarditis—Sanders

(*Continued from page 91*)

an "inciting" factor which alters the antigenic nature of the myocardium and initiates a series of pathologic events.

Special appreciation is expressed to Dr. Maurice A. Mufson, Director, Department of Virology, The Hektoen Institute for Medical Research of the Cook County Hospital, Chicago, Ill., and to Dr. Michael Haddad, Associate Professor of Pathology, Emory University School of Medicine, Atlanta, Ga. Without their assistance this study would not have been possible.

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President's Page

INCREASING COSTS—INCREASING LITIGATION—ARE THERE SOLUTIONS?

LIKE THE CLICHÉ of the "weather," much is said and written about professional liability and liability insurance as to increasing costs and increasing litigations, but so little seems to be done. It is hoped that the more recent investigation by a Government committee and the extensive study by the American Medical Association will spotlight not only the causes and effects but some solutions to these ever-increasing problems.

The Subcommittee on Executive Reorganization of the Committee on Government Operations of the United States Senate has recently issued a report entitled "Medical Malpractice: The Patient Versus the Physician." This is a 9-month study of the malpractice problem by a committee headed by Senator Abraham Ribicoff of Connecticut. Questions relating to the rise in the number of law suits, the relation of malpractice litigation to the quality of medical care, and the possible role of the Federal Government in this latter area were forwarded to, and comments asked of associations which provide health care, i.e., AMA, AHA, insurance companies, lawyers, and the Department of Health, Education, and Welfare.

The AMA, as requested by the 1968 Clinical Convention, has also been deeply involved in such a study and has presented a very comprehensive progress report in Denver, Colorado, in December 1969.

Some conclusions of both studies are:

The number of malpractice suits and claims is rising sharply and the amounts of judgments and settlements are increasing rapidly.

Most suits are the direct result of injuries suffered by patients during medical treatment or surgery and the indirect result of a deterioration of the traditional physician-patient relationship.

Publicity given higher malpractice judgments and settlements is likely to trigger increasing litigation in other states, the latter causing companies providing malpractice insurance to increase the cost of coverage. These costs, in the form of higher charges, are being passed on to patients, health-care insurance companies, and Federal health-care programs.

The rising number of malpractice suits is forcing physicians to practice defensive medicine, ordering excessive diagnostic procedures for patients, thereby increasing care cost, and declining to perform other procedures which in themselves may entail some risk of patient injury.

The lion's share of the total cost to the insurance companies of malpractice suits and claims goes to the legal community.

Some proposals as possible solutions of the insurance aspect of the malpractice problem are:

A new type of medical-injury compensation insurance designed to compensate for medical accidents or untoward results without regard to fault.

Voluntary submission of malpractice claims to boards of arbitration in lieu of going to court.

Changes in malpractice-policy-deductible amounts which, in effect, would make physicians self-insurers for higher initial amounts of claims.

Creation of an assigned risk-insurance pool which would guarantee minimum malpractice insurance coverage to every physician.

Establishment of lower cost group-coverage for large medical associations.

Development of workshops by state and county medical societies, with their counterpart hospital associations, designed to prevent medical accidents in hospitals.

Regulation of contingent fees for attorneys.

Statutory limits on damages.

Many states—Alaska, California, Oregon, Nevada, Pennsylvania, to mention a few—have introduced legislation in their respective state legislatures to implement some of the above proposals that require such action.

The feasibility of an AMA-sponsored professional liability insurance program is now being considered by the Board of Trustees. Such a program might be underwritten by a single major carrier, or perhaps a pool of carriers, and would involve state medical associations in which a majority or more of the AMA members agreed to participate.

This is simply a brief outline of the present-day thoughts on a very important subject. Any of the above-mentioned conclusions or proposals as possible solutions could be the subject of an independent article. Time and space prevent further elaboration. However, it behooves every physician to give thought to, and search for possible solutions to the crisis of professional liability and liability insurance. Our own Medicolegal Committee will be involved in these problems this year, and I urge you to submit any constructive thoughts you have for consideration and study.

Frank S. Pellegrini

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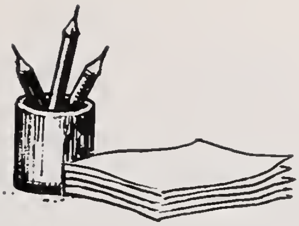
Editorials



A Salute to Dr. Harvey—President of the American Heart Association

It is appropriate that this fourth Georgetown University School of Medicine Number of the Medical Annals be dedicated to the current President of the American Heart Association, W. Proctor Harvey, M.D. The scientific papers in this issue were contributed by former students and colleagues, past and present, of the Director, Division of Cardiology, Georgetown University Hospital. These papers represent the proudest achievement of Proc Harvey's career, the development of outstanding physicians in cardiology. This collection would not have been possible without the aid of one of Proc's younger colleagues, Dr. T. James Waters, who took upon himself the task of collecting these papers.

All of us at Georgetown University School of Medicine are honored by the recognition that was given him by the American Heart Association, but we cherish most of all his friendship and integrity. Those of us who have been with Proc for these past 2 decades—Kyle, Rath, and Schreiner—recognize most of all his teaching and clinical proficiency and, above all, his gentleness and charisma as a teacher and physician. His status has enhanced that of the Department of Medicine and the School.

Despite all of the honors that have come to Proc, he cherishes most of all his position as teacher. We all know what a difficult task it is for him to turn down some of the fine young men from all over the country, and indeed overseas, who apply for training in his fellowship program. It is a harrowing task for him and his colleagues in the Division of Cardiology not to be able to find places in his program for all of them. I think that if Proc had any secret wish it would be to expand his teaching program many times.

Despite the demands on his time, he is never too busy to take care of physicians and their families. While Proc believes in using each and every modern method of teaching and has been a pioneer in the use of electronic devices for teaching, including tapes, acoustic aids, and television, none of these equals Proc himself when he is imitating the sound of a murmur that he has heard and is describing it to his students or colleagues.

W. PROCTOR HARVEY, M.D.
President, American Heart Association

A gentle man, modest, but of steadfast resolution in his devotion to the highest principles of his profession, he has generously shared himself and his knowledge for the betterment of his students, his colleagues, and the community. To his wife Irma and his family who have allowed all of us to share Proc's time and effort, we all owe much that can never be repaid.

Irving B. Brick, M.D.

Leukemia Survey: First Progress Report

The area-wide pilot survey of all cases of leukemia and related malignancies diagnosed in 1968, conducted by the Greater Washington Chapter of the Leukemia Society of America, Inc., was announced in the November, 1968 issue of the Medical Annals of the District of Columbia. Geographically, the survey includes not only the District of Columbia but also its neighboring counties in Maryland and Virginia.

The purpose of the survey is to learn more about leukemia, especially as it exists in this area. In order to accomplish this, a computerized accumulation information-retrieval center, designated LAIR, is compiling the information collected at the Medical Data Processing Center, 915 19th Street, N.W., Washington, D. C., which is a part of the Washington Medical Center complex. Epidemiologic factors, treatment and management procedures, and facts pertaining to the Leukemia Society's Patient-aid Program will be reported. The information will be available as a resource to future researchers in these diseases. The patient's identity is, however, kept confidential. Future plans call for continuing the program annually in this area as well as expanding it to a national level, thereby establishing a nation-wide survey program.

To date, 356 cases from 25 of the 36 area hospitals have been surveyed. It is expected that the complete number of cases for 1968 will exceed 500. The survey has met with a favorable and enthusiastic response from hospital administrators as well as from physicians. The total cases surveyed, by diagnosis, thus far, are as follows:

Acute lymphatic leukemia	28
Acute myelogenous leukemia	47
Agnogenic myeloid metaplasia	0
Chronic lymphatic leukemia	38
Chronic myelogenous leukemia	29
Erythroleukemia (DiGuglielmo syndrome)	2
Hodgkin's disease, granuloma	100
Hodgkin's disease, paragranuloma	5
Hodgkin's disease, sarcoma	4
Lymphosarcoma	45
Mast-cell leukemia	0
Monocytic leukemia, Naegeli type	5
Monocytic leukemia, Schilling type	3
Multiple myeloma	32
Plasma-cell leukemia	0
Reticulum-cell sarcoma	18

It is important to have a 100 per cent recording of cases in order to do an incidence study. This is being accomplished by collecting data from every possible source. Cases are accessioned by reviewing hospital records, checking tumor registries, publicity via mass media requesting families and patients to fill out survey forms, and recording of cases by individual physicians. Physicians treating cases of any of the above types of leukemia during 1968 are urged to record them with the survey. Questionnaires and prepaid return envelopes may be obtained from the Greater Washington Chapter of the Leukemia Society of America, Inc., 1801 Eye Street, N.W., Washington, D. C. 20006 (telephone: 541-1708).

George P. Blundell, M.D.
Chairman, Medical Advisory Board,
The Greater Washington Chapter of
the Leukemia Society of America

D. C. Trade, Business or Professional License*

The law† requires that every person who engages in or conducts a trade, business or profession in the District of Columbia and is exempt from the unincorporated business tax either because such trade or business cannot by law, customs or ethics be incorporated, or because more than 80 per cent of the gross income of such trade or business is derived from personal services actually rendered by the individual (sole proprietor) or members of the partnership or other entity and in which capital is not a material income-producing factor, be required to apply for and obtain an annual Trade, Business or Professional License. Corporations and unincorporated businesses are excluded.

Examples of professions meeting this criterion are accountants, architects, attorneys, dentists, engineers, medical doctors, and veterinarians.

Individuals working for others on a salary basis are not required to obtain this license to perform such work as salaried employees. However, if outside activities are undertaken, the individual is subject to such license if he meets the requirements as set forth herein in conjunction with gross income from such outside activities.

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* Editor's note: The Revenue Officer of the Department of Finance and Revenue, Government of the District of Columbia submits this information for the benefit particularly of young physicians beginning practice in D. C. and for other physicians coming into the District of Columbia to practice for the first time.

† Title 47, Section 1591 (b) of the D. C. Code.

The fee for this license is $25.00 and must be paid prior to December 1 of each calendar year to entitle the licensee to engage in or conduct a trade, business or profession in the District of Columbia if gross receipts from such business, trade or profession in the District of Columbia exceeds $5,000.00 during a given calendar year.

The license required to be obtained as set forth above shall be in addition to all other licenses, fees, and permits required by law.

Further information may be had by contacting the Government of the District of Columbia, Department of Finance and Revenue, P.O. Box 419, Washington, D.C. 20044, or by telephoning (202) 629-3464 or 3465.

Some Thoughts on Retiring*

Retirement is not the end of everything—only the mere half-closing of one door and the opening of another to create new memories for future years by doing things. Don't get trapped into the barrenness of a busy life. The music of time can be pleasant for those who stop to listen. Many think retirement is the end of the road, but as some of my friends always maintain—take a positive stance—so I'll simply say (to steal an exit line from an old Broadway play), "Parting is such sweet sorrow!"

Lewis L. Frey, Ph.D.

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* Editor's note: Dr. Frey, a long-time Associate member of the D. C. Medical Society, is well known to Washington physicians, having represented Parke-Davis in the Washington area for 27 years. These reflections upon retirement were published in the December issue of the *National Capital Pharmacist.*

Report of the Delegates on the AMA Clinical Convention

The twenty-third Clinical Convention of the American Medical Association was held in Denver, Colorado, November 30 through December 3, 1969.

The House of Delegates, in over 9 hours of formal sessions, considered 99 items of business.

President Gerald D. Dorman termed the decade ahead, "The Significant Seventies," and he challenged the AMA to prove to the public through visible action that it has become more patient-oriented. He urged that the Association be strengthened by making it relevant to all physicians. To accomplish this the AMA must strive to attract physician educators, researchers, administrators, and those in Federal service. These physicians, plus medical students and young physicians in training, must be attracted to the AMA by its increased patient-orientation and willingness to accept new ideas.

The House adopted as policy statements that "it is a basic right of every citizen to have available to him adequate medical care . . ." and "health care for the poor should not be disassociated from but rather should be a vital part of, the overall health care system."

The adopted report included recommendations for increased funding of effective government programs for the health care of the poor and medically indigent; funding for neighborhood health centers; programs for elimination of unfavorable environmental conditions in disadvantaged areas; and AMA support of innovative methods of health care delivery.

Also urged were increased physician services in urban slum areas; a Project U.S.A. counterpart of the Volunteer Physicians for Viet Nam; medical society support of medical school scholarships for disadvantaged students; increased participation of minority group physicians in AMA activities; and several other specific proposals relating to improved health care for the poor.

The House established an ad hoc committee on long-range planning and development. This committee of 9 will study the report of the Board of Trustees regarding planning and development and will recommend the structuring and charge of a permanent Long-range Planning and Development Committee to the House at the 1970 Annual Convention.

The Board of Trustees' report is also to be studied by the component state societies, and their recommendations will be considered by reference committees at the 1970 Annual Convention.

The House adopted a policy statement on marijuana which included the following points: "Cannabis is a dangerous drug and as such is a public health concern. It is a psychoactive substance which can have a marked deleterious effect on individual performance and social productivity. A significant number of exposed persons become

Drug Abuse—Manifestations of the Stimulant Abuser (Amphetamines—"Bennies")*

1. Excess activity—student is irritable, argumentative, nervous, and has difficulty sitting still in classrooms.
2. Pupils are dilated.
3. Mouth and nose are dry with bad breath, causing user to lick lips frequently and rub and scratch his nose.
4. Chain smoking.
5. Goes long periods without eating or sleeping.

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*This information is reproduced from "Parental Alert," copies of which may be obtained on request to the Broward County Medical Association, 2200 South Andrews Ave., Fort Lauderdale, Fla. 33316.

chronic users. . . . The sale and possession of marijuana should not be legalized. . . . The handling of offenders should be individualized. . . . The courts should have sufficient discretion to deal flexibly with violators. . . ."

The House voted to discontinue the AMA-ERF's Institute for Biomedical Research as soon as its Board of Directors deems feasible. This action was taken on the reluctant recommendation of the AMA-ERF Liaison Committee of the House of Delegates. Despite high praise for the work of the Institute, the House realized that the increasing costs and lack of predictable outside funds made long-term continuance of the program impossible without a significant dues increase for all AMA members.

In response to a special report and 2 resolutions, the House established a Committee on Private Practice consisting of 9 Active members of the Association. Dr. C. Willard Camalier, Jr., of the District of Columbia, was appointed to this committee. The new committee will be constituted as a standing committee of the Council on Medical Service. The functions of the Committee are to encourage and promote the private practice of medicine, develop new methods, publicize the merits of private practice, and to encourage and help develop similar committees by state medical associations.

The House affirmed its support of the concept of Regional Medical Programs as enacted in PL 89–239.

Firm opposition was expressed to on-site auditing in physicians' offices by representatives of governmental agencies, and it was urged that problems between physicians and intermediaries or governmental agencies be referred to local peer review committees. The House reaffirmed its position that it will help Federal agencies in "their quest for physicians who are errant in their participation in providing medical services to Medicare and Medicaid patients."

The House opposed Federal physician licensing and opposed "the Senate Finance Committee amendment which militates against professional corporations."

Adopted was a legislative proposal to require (unless the physician designated otherwise) that prescription drug labels carry the trade name, quantity and strength of the drug dispensed.

At the Denver Meeting, the House also:

Stated opposition to establishment of a School of Health Sciences under the auspices of the Department of Defense.

Expressed concern about the ever-increasing costs of hospital care services.

Reaffirmed endorsement of the tax credit plan to increase health insurance coverage among all citizens.

Stressed the difference between the all-inclusive term "health care costs" and the restrictive term "medical care costs" and urged that costs be discussed in relation to the correct term.

Approved essentials of an accredited educational program for orthopedic assistants, and another program for radiologic technologists.

Reaffirmed present AMA policy on therapeutic abortion and rejected a resolution from the Section on Preventive Medicine that urged revision of state laws to allow "abortion on demand."

John J. Hughes, M.D., *Delegate*
C. Willard Camalier, Jr., M.D., *Delegate*

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HEALTH DEPARTMENT NOTES

School Employe Chest X-ray Program

A. D. C. Board of Education regulation states that all school employes, including administrators, teachers and custodial personnel, must have a chest X-ray examination every 3 years for the detection of tuberculosis and other chest diseases. The last such program was conducted by the Health Department in 1967.

To accommodate the nearly 15,000 District public and parochial school employes, the D. C. Department of Public Health is making available 5 of its chest X-ray facilities and the mobile chest X-ray unit for free chest X-ray examinations from February 2 through April 30, 1970.

Although these facilities are open to all school employes, some will wish to have the X-ray film made by their private physician, and they are urged to do so.

Three years ago 72 per cent of the 9,000 employes were X-rayed. Of these, 27 tuberculosis suspects were found. On recall, 10 were negative, 10 were found to have nontuberculous chest diseases, and 7 previously had been diagnosed as tuberculous.

In addition, the following were found: 136 cardiac suspects, 12 cancer suspects, 39 cases of emphysema, 16 persons with calcifications in the lungs, and 130 with other abnormalities.

All school employes who have had a chest X-ray since July 1, 1969 need not have another at this time. This will include about 3,000 new employes who were required to have a preëmployment physical examination, which included an X-ray examination. Pregnant women also will be excluded from this program.

To expedite the taking of X-ray films, both at Department facilities and in the private physician's office, Form 792-22 has been supplied to each school principal for distribution to each school employe, who should complete the form before reporting for an X-ray examination.

When the employe is X-rayed by a private physician, the physician should complete the form and send the white, yellow and pink copies to the Coördinator, School Health Program, Room 833G, 1875 Connecticut Avenue, Washington, D. C. 20009. The orange copy should be given immediately to the employe, who is responsible for its return to the principal to show that the X-ray has been taken.

Private physicians and school employes should make their own arrangements for reporting results to the employe. Generally a 70 mm. X-ray film is used in this program. However, it is recommended that a 14 × 17 inch X-ray film be made of every person with a previous history of tuberculosis or other chest disease.

Follow-up on suspicious findings will be made by the Health Department or private physicians, depending upon the employe's choice. Individuals with suspicious chest abnormalities will be contacted for additional screening tests and diagnosis.

Since tuberculosis is of great concern to health officials because it is still a major health problem in the District, I believe that every means should be used for its detection. Certainly, taking X-ray films every 3 years, even if every school employe took part, is not satisfactory. For this reason I hope to offer annual screening programs for school employes.

Health Department facilities available for chest X-ray films are: Northwest Central Clinic, 1325 Upshur Street, N.W.; Chemo Center, 1325 10th Street, N.W.; Area C Health Center, 1905 E Street, S.E.; and the Health Centers for Mothers and Children located at 4130 Hunt Place, N.E., and 702 15th Street, N.E. The mobile unit will be parked near 10 schools during April. These locations may be obtained by calling 629-3776, the Health Department's Health Information and Referral Center.

Raymond L. Standard, M.D., M.P.H.
Acting Director, D.C. Department of Public Health

Patients Needed for Study of Paralysis

The coöperation of physicians is requested in the referral of patients with periodic paralysis for a study of new therapeutic agents being conducted by the National Institute of Neurological Diseases and Stroke at the Clinical Center, National Institutes of Health, Bethesda, Md. On completion of their studies patients will be returned to the care of the referring physician, who will receive a summary of findings.

Physicians interested in having their patients considered for admission to this study may write or telephone Dr. W. King Engel, Clinical Center, Room 10-D-18, National Institutes of Health, Bethesda, Md. 20014; telephone: (301) 496-6191.

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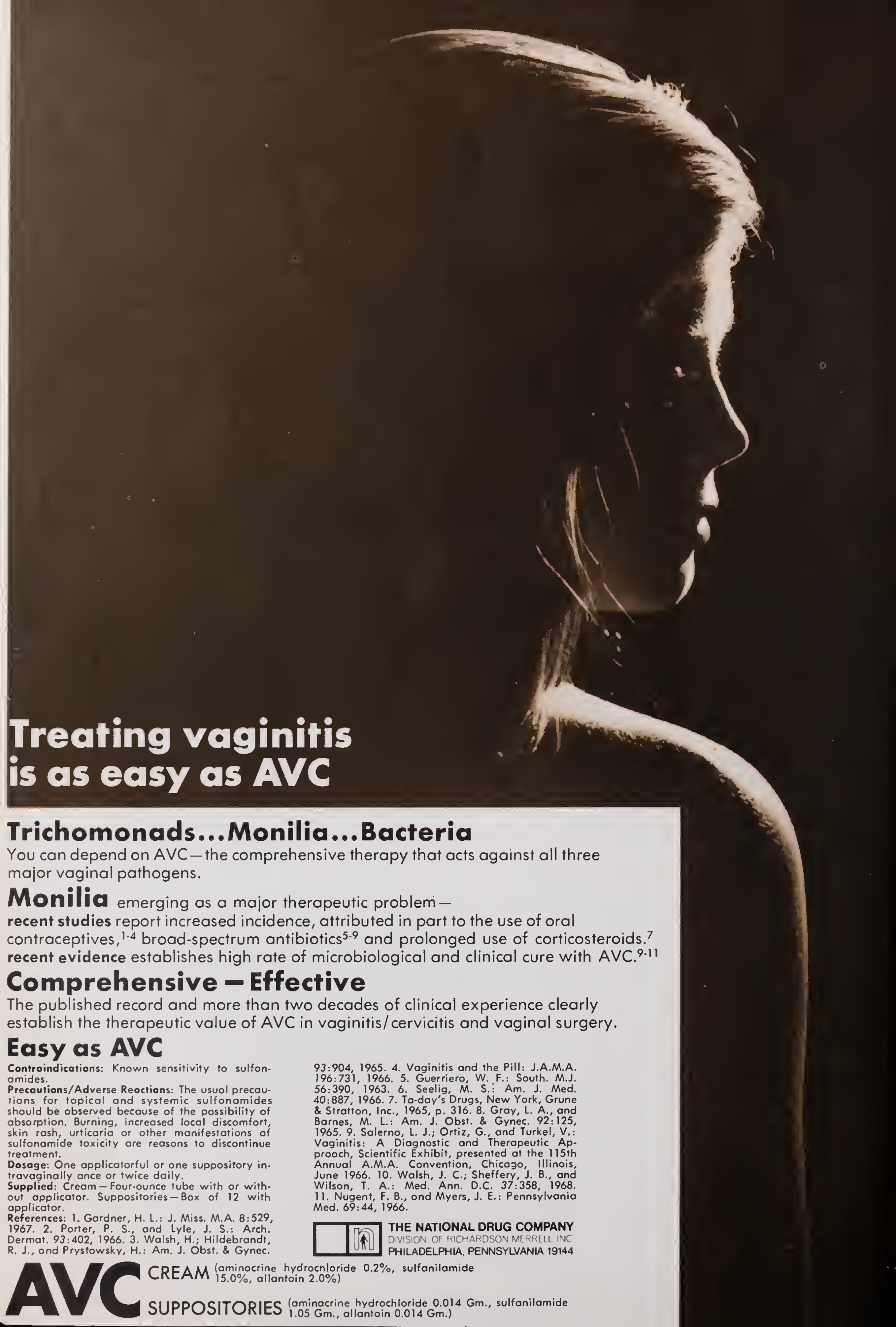

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Supplied: Cream—Four-ounce tube with or without applicator. Suppositories—Box of 12 with applicator.

References: 1. Gardner, H. L.: J. Miss. M.A. 8:529, 1967. 2. Porter, P. S., and Lyle, J. S.: Arch. Dermat. 93:402, 1966. 3. Walsh, H.; Hildebrandt, R. J., and Prystowsky, H.: Am. J. Obst. & Gynec. 93:904, 1965. 4. Vaginitis and the Pill: J.A.M.A. 196:731, 1966. 5. Guerriero, W. F.: South. M.J. 56:390, 1963. 6. Seelig, M. S.: Am. J. Med. 40:887, 1966. 7. To-day's Drugs, New York, Grune & Stratton, Inc., 1965, p. 316. 8. Gray, L. A., and Barnes, M. L.: Am. J. Obst. & Gynec. 92:125, 1965. 9. Salerno, L. J.; Ortiz, G., and Turkel, V.: Vaginitis: A Diagnostic and Therapeutic Approach, Scientific Exhibit, presented at the 115th Annual A.M.A. Convention, Chicago, Illinois, June 1966. 10. Walsh, J. C.; Sheffery, J. B., and Wilson, T. A.: Med. Ann. D.C. 37:358, 1968. 11. Nugent, F. B., and Myers, J. E.: Pennsylvania Med. 69:44, 1966.

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Drug Addiction—A Crime or a Disease?*

THE ADDICT is a sick individual. He needs hospitalization and care if he is to get off and stay off drugs. Yet, in the eyes of the law, such a person at best is a quasi-criminal. Possession of narcotics is illegal under Federal statutes—and it's almost impossible to be an addict without narcotics. But while Federal law does not consider addiction itself a crime, many states do, even when the addict is not in possession of drugs when arrested.

The argument about whether an addict should be handled by wardens or doctors has been going back and forth for many years. In the past neither approach has proven adequate.

The control of drugs and addiction became a police matter in 1914 with the passage of the Harrison Narcotic Act. After that, capture with the paraphernalia of the drug habit meant jail for the addict. And to the addict, jail means physical torture. When the drugs his body has grown to demand are abruptly stopped, he goes into "withdrawal." His muscles knot in severe cramps, he twitches, vomits; light and noise send him into fits of pain; he loses all control.

Despite its "tough" laws, the United States today still has a drug addiction problem unique in the Western world and is the chief market for illegal narcotics. Traffic in dope costs our citizens $500 million annually—mostly in property stolen by addicts to buy satisfaction for their cravings.

On the other hand, initial attempts to deal with addiction through health service clinics were not effective either. Between 1919 and 1923 about 44 clinics were set up in various cities to supply drugs to addicts who could no longer get narcotics in the clamp-down after passage of the Harrison Act. Many addicts were even issued a supply of drugs to take home for self-administration so they wouldn't be popping up at the clinics every few hours for a shot.

The clinics were supposed to keep addicts out of the hands of the criminal drug-peddlers and thus wipe out the underworld's narcotics empire.

But the results were quite different. Criminals, prostitutes and drug-peddlers swarmed to some of the clinics in search of easy narcotics, creating local resentment against the clinics. Many addicts sold part of their free drug supply to others, causing more addiction. Others only had their appetite whetted by the free drugs and turned to underworld peddlers for more. Instead of drying up, illegal dope traffic spurted.

Some of the clinics functioned for only a few weeks, others for as long as 4 years. In the end they demonstrated that, with the knowledge then current, addicts could not be treated as outpatients.

The failure of both jails and outpatient clinics to control drug addiction doesn't leave us with an unresolvable dilemma, however. Medical and scientific leaders believe a middle of the road approach can produce results. This would entail commitment of addicts—but as patients, not prisoners—coupled with extensive postwithdrawal rehabilitation under medical supervision.

A joint statement by the American Medical Association and the National Research Council said, "Historically society has found it necessary to employ legal controls to prevent the spread of certain types of illness that constitute a hazard to the public health. Drug addiction is such a hazard."

The 2 organizations urged:

"Measures designed to permit the compulsory civil commitment of drug addicts for treatment in a drug-free environment.

"The advancement of methods and measures toward rehabilitation of the addict under continuing civil commitment.

"After complete withdrawal, follow-up treatment for addicts, including that available at rehabilitation centers.

"The development of research designed to gain new knowledge about the prevention of drug addiction and the treatment of addicted persons.

"The dissemination of factual information on narcotic addiction."

No one really knows why an addict is what he is. What studies have been made on the subject seem to indicate that the addict is basically an unstable person, often "overwhelmed with helplessness and frustrations."

The vast majority of addicts demand narcotics—heroin, morphine, and certain synthetics such as Demerol.® These are sedatives. They relax, create a feeling of withdrawal and sleepiness. A few drug users, however, want the exact opposite effect. They go in for stimulants which cause wakefulness, exhilaration, a feeling of mastery and power. But no matter whether the addict stupefies himself with sedatives or puffs himself up with stimulants, his quest is the same. He wants escape from himself and reality.

The "escape route" often begins with "reefers"—cigarettes made from the leaves of the female marijuana plant. (The more innocent male plant produces little more than hemp fibers for rope.)

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* Prepared by the Communications Division of the American Medical Association.

When smoked, marijuana induces a zombie-like effect that tends to stifle normal inhibitions.

From marijuana the addict soon gravitates to more potent drugs which supply bigger kicks. These are either sniffed, as in the case of cocaine, injected under the skin or into the muscle ("skin bombing"), or squirted directly into the blood vessels ("mainlining").

Neither marijuana nor the stimulants create any actual physical need. But they do create an emotional craving, a mental dependency that can be just as real to the addict as his need to breathe.

Narcotics, on the other hand, produce both psychological and physical dependence. Once pickled with narcotics, the nerves of the body will writhe in anguish unless they are calmed with more dope.

The granddaddy of all addicting drugs is opium. From it is refined heroin, morphine, codeine, and similar sedatives so important to medicine for their pain-killing properties.

Ironically, heroin was introduced in 1898 as a nonaddicting replacement for morphine. One enthusiast hailed it as the "miracle" drug of the day. It was soon discovered, however, that the claims were utterly false. Heroin's addicting powers are so great that its use is now prohibited in this country, even in medical practice.

One thing the addict can't hide is the needle scars over veins where he injects himself. These are usually on the inner arm where blood vessels lie close to the skin. Since they make identification of an addict easy, some heroin users seek to disguise the scars with burns. Self-mutilation means little to them, but then so does life.

Suicide, usually from an overdose of narcotics, is not uncommon among addicts, although precise statistics are lacking. Others take an overdose by accident—their demands get too high, or they get a packet that is stronger in heroin than they've been used to.

But narcotics poisoning is not the only danger. In his frenzy for his shot the addict usually can't be troubled with precautions. Dirty home-made syringes (which can't be boiled anyhow), dirty needles, dirty drugs often lead to tetanus and other infections. Or if a "community" needle is used, he may get hepatitis or a venereal disease.

Since he is an addict he doesn't seek medical help. That could lead to discovery. A study at one hospital showed that 100 per cent of addicts stricken with tetanus died because they had waited too long to seek treatment.

There is also a high death rate among babies born to addicted mothers. Since mother and child share the same blood supply before birth, the baby also becomes a drug addict. After delivery the child may go into withdrawal resulting in convulsions. Death may follow unless the doctor knows in advance what to expect. He seldom does. Addicts like to keep their secrets.

One expert speculated that 25 per cent of the Nation's crimes are related to narcotics addiction. Even higher figures have been reported for New York City, where 45 per cent of the known drug users dwell, and for Chicago, Los Angeles, and Detroit, the Nation's other major centers of addiction. Other experts point out that there are really no reliable statistics on the point.

Another point for debate is whether addicts turn to crime in order to buy narcotics, or whether it's the other way around—criminals become addicts. Regardless, one thing is clear. Crime and addiction have a strong link. And paradoxically, it's just as clear to many medical authorities that handling addicts as criminals is no way to clear up the problem.

Curing addiction is primarily a rehabilitation problem. At the 2 Public Health Service hospitals which treat addicts—Fort Worth, Texas and Lexington, Ky.—and at New York's Riverside Hospital, which cares mostly for teenagers, it has been found that as few as 10 per cent of the patients are known to stay off narcotics after their release.

The problem is that patients cannot be retained long enough for psychiatrists to get at the real cause of the addiction—the basic unrest and tension. Nor is there enough time to realign them to life as it really exists.

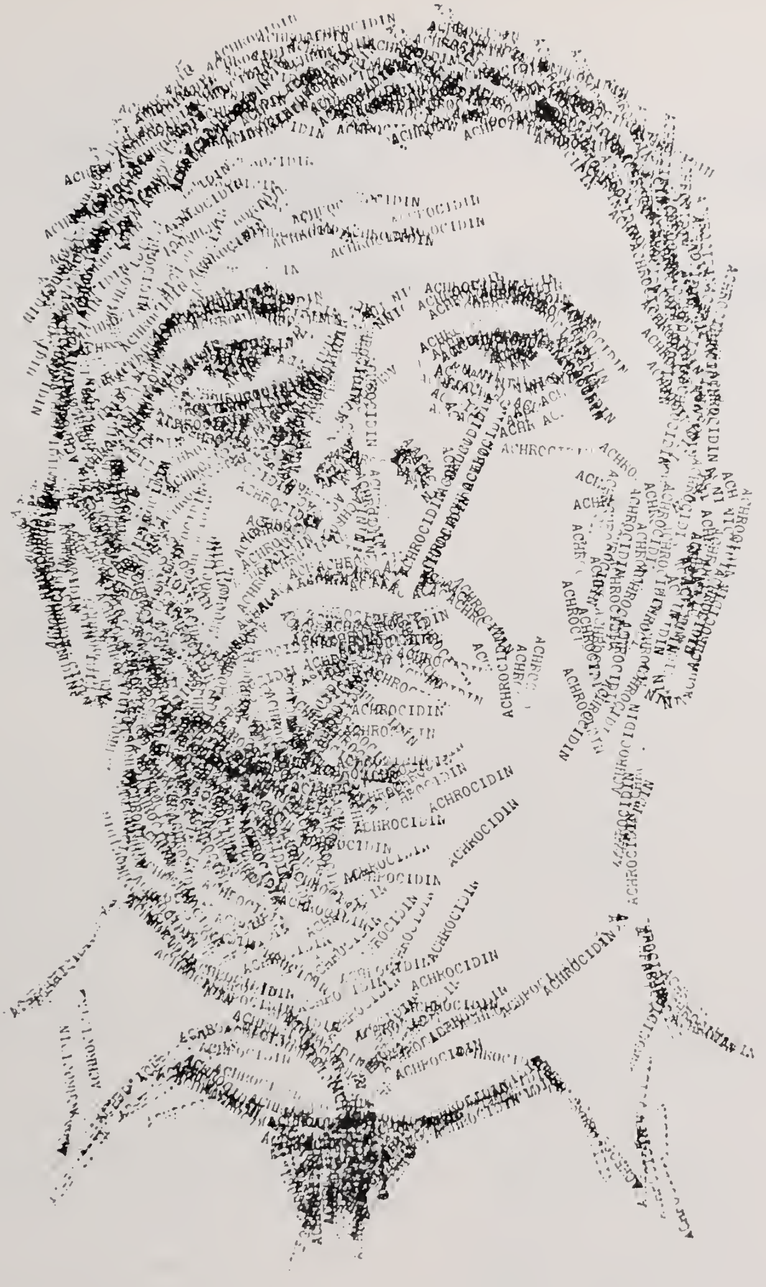
Dr. Nathan B. Eddy, Executive Secretary of the National Research Council's Committee on Drug Addiction and Narcotics, said that all states have civil commitment laws for the mentally ill. These laws, he insists, should be used as a means of committing addicts.

Dr. Dale C. Cameron, Chairman of the AMA's Committee on Alcoholism and Addiction, also pointed out that mental health clinics and community rehabilitation centers must help the former addict when he returns to the community.

Addicts, he said, must be treated for what they really are, sick individuals. After medical treatment for the drugged body must come psychiatric treatment for the mind that thinks it must have drugs.

Criminal acts cannot be overlooked, but to merely jail addicts, or even to put them in hospitals until the physical need for drugs has

(*Continued on page 126*)



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Adverse Reactions: *Gastrointestinal*—anorexia, nausea, vomiting, diarrhea, stomatitis, glossitis, enterocolitis, pruritus ani. *Skin*—maculopapular and erythematous rashes; exfoliative dermatitis; photosensitivity; onycholysis, nail discoloration. *Kidney*—dose-related rise in BUN. *Hypersensitivity reactions*—urticaria, angioneurotic edema, anaphylaxis. *Intracranial*—bulging fontanels in young infants. *Teeth*—yellow-brown staining; enamel hypoplasia. *Blood*—anemia, thrombocytopenic purpura, neutropenia, eosinophilia. *Liver*—cholestasis at high dosage.

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►DOCPAC BRIEFS

Reuther Unveils Plan for National Health Insurance*

DESCRIBING the present American health-care system as a Model-T car in the space age, Walter Reuther, President of the United Auto Workers, recently unveiled the framework for a national health insurance program.

Reuther revealed his plan in New York City at a 2-day conference of 65 national health-related organizations called by the Committee for National Health Insurance (CNHI) to discuss the tentative specifications for a universal program.

"We worked hard to build Blue Cross, but we must move on to develop a new instrument. . .

"The programs should be financed by contributions from employers, employees, and self-employed persons, and from general tax revenues.

"The insurance system of Social Security would be utilized, including trust-fund procedures.

"Two-thirds of the fiscal resources would come from payroll taxes and one-third from Federal general tax revenues, with state and local governments not participating.

"Health service should be provided on a 'service' basis, not indemnity, and population coverage should be as nearly 'universal' as feasible for all Americans.

"Group practice of health-care personnel, hospitals, and related facilities should be prescribed as goals, with financial and other incentives established for providers."

Asked if he was aware of management's attitude toward the health insurance proposal, Reuther said, "Management and industry quietly and privately agree. They say they get the least return from money they put into health."

Reuther said he expects a bill for his proposed program of national health insurance to be introduced in Congress "very early next year."

The CNHI has a national headquarters in Washington, is very extensively organized, and enlisted in its program are a great many powerful and prominent persons (Committee of 100).

Unless you agree with their stated objectives, I wish you would join others of us in becoming a permanent member of DocPac.

EDWARD W. NICKLAS, M.D.

►NEW MEMBERS

Active

JACK O. BRADT, M.D. Office: 2100 Connecticut Avenue, N.W. Born in Ventura, Calif. Medical degree: Hahnemann College, 1955. Specialty: Child Psychiatry.

VIVIAN R. IGLEHART, M.D. Office: 2631 Jasper Street, S.E. Born in Morven, N.C. Medical degree: Howard University, 1964. Specialty: Pediatrics.

CHIA-CHING LIU, M.D. Office: 919 18th Street, N.W. Born in Taiwan. Medical degree: National Taiwan University, 1957. Specialty: Orthopedic Surgery.

PEARL L. ROSSER, M.D. Office: 2631 Jasper Street, S.E. Born in Miami, Fla. Medical degree: Howard University, 1960. Specialty: Pediatrics.

JOSEPH R. WILSON, M.D. Office: 1150 Varnum Street, N.E. Born in Baltimore, Md. Medical degree: University of Maryland, 1963. Specialty: Anesthesiology.

Associate

GUILLERMO S. SIMON, M.D. Office: 5701 85th Avenue, New Carrollton, Md. Born in Beni, Bolivia. Medical degree: University of Chile, 1957. Specialty: Obstetrics-Gynecology.

(*Continued on page 126*)

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News & Personals

Summary of Executive Board Actions

Proceedings of December 15 Meeting

At the invitation of the Chairman, the December 15 meeting of the Executive Board was held at the home of Dr. and Mrs. Paul R. Wilner. Present were Drs. Frank S. Bacon, Frank S. Pellegrini, Walter L. Henry, Jr., Henry D. Ecker, William S. McCune, John J. Hughes, C. Willard Camalier, Jr., and Mr. Thomas Sadler, Secretary. Dr. Raymond T. Holden was a special guest of the host. The meeting was called to order by the Chairman at 8:30 p.m.

The minutes of the November 24 meeting were approved as submitted.

Committee meetings: The Secretary reported the following committees had met since the last meeting of the Board:

December 3 Fee Review Committee
4 Breast Cancer Study Committee
4 Physician Placement Committee
5 Relative Value Study Committee
9 Board of Credentials
9 Medical Bureau Committee
12 Utilization Committee
15 Interdisciplinary Committee on Drug Dependency

Board of Credentials: On recommendation of the Board of Credentials, 5 applicants were elected to Active membership, 1 to Associate, and 1 to Resident-Intern membership. Their names appear on page 116. Approval was given to the following changes in membership status:

Transfers

Active to Associate: John H. Bayly, Otis R. Farley, and Robert G. Taylor
Active to Special: R. Lomax Wells
Resident-Intern to Active: Dev Raj Chitkara

Resignations

Active: Francis L. Land, Roy T. Lester, and Edith H. Weigert

Having fulfilled the requirements of the Constitution and By-laws, the following members were confirmed as Life members:

Claude R. Ball
Irving Brotman
Elizabeth E. Chickering
Worth B. Daniels
George Dewey
Russell J. Fields
Lynwood Heiges
Vincent Hernandez
Joseph V. Kennedy
Sander E. Lachman
Raphael N. Manganaro
Arnold H. McNitt
Esther A. Nathanson
Edward W. Nicklas
John F. Preston
G. Victor Simpson
Walter R. Stokes
Valentine A. Ujhely
John E. Virnstein

SAMA: Considerable discussion was held regarding the Student American Medical Association, with emphasis on the participation of SAMA representatives in Society activities. Dr. Hughes suggested that a council be formed as a focal point of communication and that the President of the Medical Society call a meeting with SAMA representatives for this purpose. Dr. Holden said he was most receptive to such a council, which could assign nominees to various Society committees. Definitive action was deferred until the January meeting.

Cancer Case-finding Project: This project was proposed to the Society for its approval by Mr. James L. Harrison, President of the D. C. Division of the American Cancer Society. Its intent is to inform cancer patients or their families, as early as possible after the diagnosis, of the many existing community resources. Permission would be needed from hospital administrators to obtain access to necessary information from their Departments of Pathology. Mr. Harrison emphasized that no contact would be made with the family or patient without the express authorization, consent and knowledge of the attending physician, surgeon, or dentist. A motion was made and carried to endorse such a project.

Reach-to-Recovery Program: A motion was made and carried to endorse the American Cancer

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Society's Reach-to-Recovery Program (see page 97) with the understanding that it be used only when requested by the attending physician and with the informed consent of the patient.

Regional Medical Program: The report of RMP as submitted by Coördinator Wentz was accepted.

Other Business

1. Dr. Bacon reported that he had a meeting, December 12, with Dr. Raymond L. Standard, Acting Director of the D. C. Health Department, and Dr. James Carpenter, President of the Medico-Chirurgical Society of the District of Columbia. Dr. Bacon stated that Dr. Pellegrini would continue these monthly meetings with Drs. Standard and Carpenter.

2. After discussing the recommendation of the Committee on Drug Dependency "that the Medical Society go on record and communicate with the Mayor and the City Council expressing grave concern of lack of attention and funding of drug abuse problems in the District of Columbia," a motion was made and carried that the President draft a letter expressing the sentiments of the Committee on Drug Dependency. Also on the recommendation of this Committee, a second motion carried that the Medical Society go on record opposing the sale of legalized marijuana.

3. Dr. Camalier described briefly some of the actions taken by the House of Delegates at the AMA Clinical Convention held in Denver in early December. He reported that the House had voted to close the Institute for Biomedical Research. A Committee on Private Practice had been established and he had been appointed to this Committee. Dr. Hughes, he said, would submit a full report (see page 107) for the January Board meeting.

4. Through a special motion the Executive Board expressed its appreciation to Dr. Wilner for his devoted service to the Society as an officer and as Chairman of the Board during 1969. The members also presented him with a gift as a special remembrance.

There being no further business, the meeting was adjourned at 10:25 p.m.

MEETINGS

"Care of the Dying Patient" will be the theme of a symposium to be held at Georgetown University Medical Center, March 4, from 1 to 5 p.m., in the Gorman Auditorium. It is being sponsored by the Department of Psychiatry in collaboration with the Departments of Medicine, Surgery and Pediatrics.

This symposium is open to all physicians, and there is no registration fee. Further information may be secured from Dr. Louis F. Rittelmeyer, Jr., Assistant Professor of Psychiatry, Georgetown University Hospital, Washington, D. C. 20007.

The 17th Sectional Meeting for Doctors and Nurses, sponsored by the American College of Surgeons, will be held at the Sheraton Park Hotel in Washington, March 16–18. Dr. Charles A. Hufnagel, Professor and Chairman, Department of Surgery, Georgetown University School of Medicine, heads the committee planning the doctors' program. Doris Kirk, R.N., Operating Room Supervisor, George Washington University Hospital, and Sister De Sales, R.N., Operating Room Supervisor, Providence Hospital, are co-chairmen for the nurses' program. As guests of the College, nurses pay no registration fee.

In addition to general surgery, there will be programs in the specialties of gynecology-obstetrics, neurosurgery, ophthalmology, otolaryngology, plastic surgery, and urology.

In addition to Dr. Hufnagel, the following members of the D. C. Medical Society are participating in the program for physicians:

Drs. Paul C. Adkins, Nicholas M. Azzato, Roger C. Baker, Robert H. Barter, Brian Blades, Philip L. Calcagno, A. F. Castro, Robert J. Coffey, Claude L. Cowan, Darrell C. Crain, Jr., J. Keith Cromer, T. Wilkins Davis, Armando G. DiBiasio, Albert F. Fleury, John L. Fox, George W. Hyatt, W. Dabney Jarman, Timothy L. Kelly, Jr., Margaret M. Kenrick, John H. King, Jr., David Kushner, Gordon S. Letterman, James J. McFarland, John W. McTigue, Warren J. Nelson, Philip H. Philbin, Judson G. Randolph, Joseph O. Romness, Harold L. Rudman, Larry W. Stanton, Maxine A. Schurter, Benny Waxman, and Blair M. Webb.

Members of the D. C. Medical Society are also assisting in the program for nurses. They are: Drs. John P. Adams, Paul C. Adkins, William D. Byrne, Patricia Russell, Paul E. Shorb, Jr., and Nicholas P. D. Smyth.

Further information may be secured directly from the College at 55 Erie Street, Chicago, Ill. 60611.

The 13th Annual Joint Cardiac Symposium, sponsored by the Washington Heart Association and the Heart Association of Northern Virginia, Inc., will convene, Wednesday, April 8, in the Persian Room at the Marriott Twin Bridges Motor Hotel on U. S. 1, Washington, D. C. (Virginia side).

The United States Pharmacopeial Convention will hold its decennial meeting, April 8–10, at the Shoreham Hotel in Washington. On April 9 a special program will be presented honoring the 150th anniversary of the founding of the U. S. Pharmacopeia. Dr. Lawrence E. Putnam will represent the D. C. Medical Society at this meeting.

The Children's Hospital of the District of Columbia will conduct its annual **Postgraduate Course in Pediatrics** on Friday and Saturday, April 10 and 11.

The Spring Session of the American Academy of Pediatrics will be held at the Washington Hilton Hotel on April 13, 14, 15 in conjunction with the Centennial of Children's Hospital.

GENERAL NEWS

Mayor Walter E. Washington has appointed **Dr. Raymond L. Standard** as **Acting Director of the D. C. Department of Public Health,** succeeding Dr. Murray Grant. Dr. Standard has served as Chief of the Bureau of Chronic Disease Control of the Health Department.

Dr. Standard received his B.S. degree from Howard University in 1948 and his medical degree in 1952. He interned at the Homer G. Phillip Hospital in St. Louis, Mo. and was resident physician at Freedmen's Hospital, Washington. He earned his Master of Public Health degree at Johns Hopkins University School of Hygiene and Public Health in 1967. He has been Clinical Instructor in Internal Medicine at Howard University since 1960 and was named Clinical Instructor in Preventive Medicine in July 1968.

Mayor Washington named **Dr. William J. Washington, Jr.,** Chief Medical Officer at Glenn Dale Hospital, as his **personal representative on D. C. General Hospital affairs.**

Dr. C. Wendell Freeman has been appointed **Acting Chief of the Bureau of Chronic Disease Control,** filling the vacancy created by the elevation of Dr. Standard to the post of Acting D. C. Health Director.

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Dr. Charles C. Edwards is the new **Commissioner of the Food and Drug Administration.** He succeeds Dr. Herbert L. Ley, who has served since July, 1968.

Dr. Edwards was on the staff of the American Medical Association from 1952 to 1967, first as Assistant Director of the Association's Department of Medical Education and then as Director of the Division of Socioeconomic Activities. He spent the past 2 years with the Chicago management firm of Booz, Allen and Hamilton.

The Food and Drug Administration is being moved to independent status within the Department of Health, Education, and Welfare. This separates it from the Consumer Protection and Environmental Health Service and puts it on equal rank with the National Institutes of Health.

Dr. Marc J. Musser has been appointed **Chief Medical Director of the Veterans Administration.** A former VA career medical officer, he is returning to the agency after more than 3 years as Executive Director of the North Carolina Regional Medical Program. He succeeds Dr. H. Martin Engle, Chief Medical Director since January 4, 1966, who has retired from Federal service after more than 27 years in military and VA medical posts.

The Human Life Foundation has opened offices in Washington, D. C. at 1776 K Street, N.W. Mr. Lawrence J. Kane, of Waltham, Mass., former assistant to the President of Brandeis University, has been named the first Executive Director.

The Human Life Foundation will sponsor research in the generation of human life and reproductive physiology. It will explore the implications of human fertility control medically and in relation to social and economic pressures upon family life and in relation to demographic problems. The Foundation will be concerned with abortion, euthanasia, transplantation of organs, and the exact biological significance of the term "human."

Created by an initial grant from the National Conference of Catholic Bishops, the Foundation will conduct fund-raising programs to broaden its base of support for research. However, the Foundation is nonsectarian and has been created for the primary purpose of sponsoring scientific research. Included on its Board is Dr. Paul B. Cornely, of Washington, head of the Department of Community Medicine at Howard University and President of the American Public Health Association.

Dr. Ronald P. Kaufman is the new **Medical Director of George Washington University Hospital.** He assumed the position, formerly held by Dr. Clayton B. Ethridge, January 5.

Dr. Kaufman comes from Hartford, Conn., where he was Assistant Director of the Department of Medicine of Hartford Hospital and Director of the Department of Medical Education. Prior to that appointment he was in the private practice of internal medicine in West Hartford. In addition, he was Assistant Professor of Medicine at the University of Connecticut School of Medicine and physician to the outpatient department of Yale-New Haven Hospital.

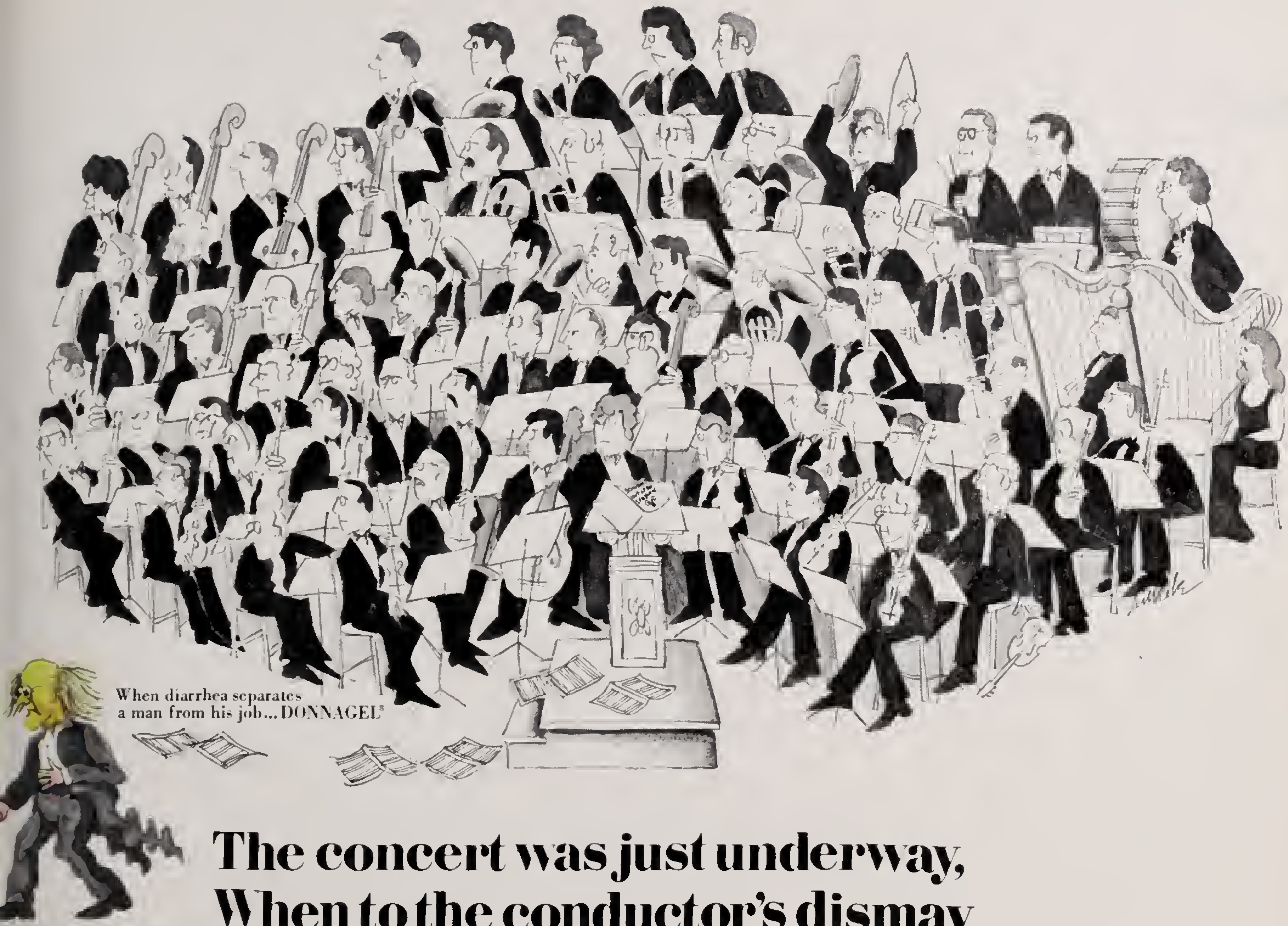
A graduate of Trinity College, Dr. Kaufman received his medical degree from the University of Pennsylvania in 1955.

Dr. Effie O. Ellis, nationally known for her work with the health and nutritional problems of the poor, joined the American Medical Association, February 1, as **Special Assistant for Health Services** to Dr. E. B. Howard, Executive Vice President. The position is a new one. She has been serving as the Director of Maternal and Child Health for the Ohio State Department of Health. A graduate of Spelman College, Atlanta, Ga., Dr. Ellis has a Master's degree in biology from Atlanta University. She is a graduate of the University of Illinois School of Medicine.

The Washington, D. C. Chapter of the American College of Radiology has elected the following officers for 1969–1970:

Dr. Louis Wener, President; Dr. Warren J. Nelson, Vice President; Dr. Joan Wohlgemuth, of Alexandria, Va., Secretary-Treasurer; Dr. William E. Sheely, Councilor; and Dr. Alvin C. Wyman, Alternate Councilor.

Georgetown University School of Medicine has received a $5,000 **grant from Research to Prevent Blindness, Inc.** to provide "maximum freedom for the pursuit of new concepts in eye research." The award makes funds available to the Division of Ophthalmology for a limitless range of new and supportive research activities aimed at the eradication of blinding diseases. Dr. Peter Y. Evans, acting head of ophthalmology, said that this latest grant from RPB has provided a total of $20,000 for the use of his Division over the past 4 years.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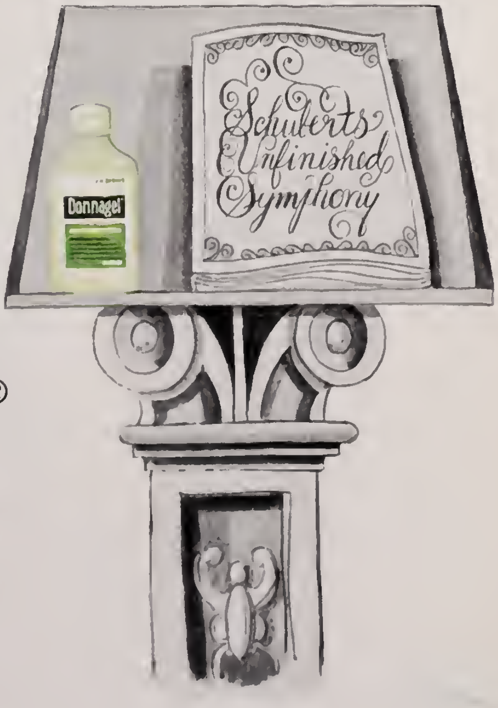

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Non-narcotic	●	●		●	●

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On the cover of this month's ANNALS, which is the Georgetown University Medical School Number, is a painting of the School of Medicine by Gustave Nebel. The painting was presented to Georgetown University in 1967 by E. R. Squibb & Sons of New York. As part of its Collegia Medica Program, Squibb has commissioned outstanding artists to do oil paintings of each school "in commemoration of the contributions of the institutions to medical education."

PERSONALS

Dr. Nina B. Woodside, Associate Director for Planning and Research, D. C. Health Department, has been named Acting Deputy Director of the Department. In addition to her new responsibilities Dr. Woodside will retain her present planning functions. She succeeds **Dr. Fredriek C. Heath,** who retired, October 1.

Dr. Heath, Deputy Director of the Health Department for the past 17 years, was honored, September 19, at a retirement dinner at the Officers Club of Walter Reed Army Medical Center, attended by more than 200 co-workers and friends. Mayor Washington presented Dr. Heath a Certificate of Merit from the District Government, and Dr. Murray Grant, immediate Past Director of the Health Department, cited him with a Letter of Commendation. Other honors included an award from the National Association of State Civil Defense Directors and a gift certificate, scroll, and letters from the Civil Service Commission and U. S. Public Health Service.

Dr. Margaret M. Nicholson, Medical Officer and pediatrician with the D. C. Bureau of Maternal and Child Health, who has served the Department since 1928, retired, October 31. Her tenure covered a span of more than 43 years.

Dr. Sidney Berman has been installed as President of the American Academy of Child Psychiatry and will serve a 2-year term (1969–1971). He is Clinical Professor of Psychiatry at George Washington University School of Medicine and is on the senior attending staff of Children's Hospital of Washington, D. C.

Dr. Reginald S. Lourie has been named to the President's Task Force on the Mentally Handicapped, which will review existing programs in this field, both public and private. The Task Force is headed by Mrs. Winthrop Rockefeller, wife of the Governor of Arkansas.

Dr. William G. Battaile was elected Vice President of the American Association of Blood Banks during its 22nd Annual Meeting in Houston, Texas, November 16–20.

At this meeting Associated Press science writer Frank Carey, of Washington, received one of the 7 Awards of Merit for "outstanding service in advancing public understanding of blood banking."

Dr. Leroy E. Burney, an Honorary member of the D. C. Medical Society, has been appointed Vice President and Executive Director of the Milbank Memorial Fund. He will assume this position in September 1970. Dr. Burney, a career officer in the Public Health Service for 25 years, was named Surgeon General by President Eisenhower and served in that position until 1961. In that year he accepted the newly created post of Vice President for Health Services at Temple University's Health Sciences Center, which he will continue to hold.

Dr. William P. Herbst, Emeritus Professor of Clinical Urology at Georgetown University School of Medicine, was unanimously elected to honorary membership in the Mid-Atlantic Section of the American Urological Association at its annual meeting, October 31, at The Greenbriar in White Sulphur Springs, West Va.

Dr. LaSalle D. Leffall, Jr., Assistant Dean of Medicine at Howard University, has been appointed to the National Advisory Committee on Alcoholism.

Dr. George E. Schreiner was reëlected President of the National Kidney Foundation at its annual meeting in Washington, November 29–30. Dr. Schreiner is Professor of Medicine at Georgetown University School of Medicine and Director of the Renal and Electrolyte Division of the University Hospital.

Dr. William H. Stewart, formerly Surgeon General of the U. S. Public Health Service, is now Chancellor of the Louisiana State University Medical Center. Recently he accepted the chairmanship of World Leprosy Week, February 15–21, according to an announcement by the Leonard Wood Memorial, one of the sponsoring organizations. Dr. Stewart is an Honorary member of the D. C. Medical Society.

Dr. Alvin Seltzer has been appointed Chairman of the Section of Allergy, Department of Medicine, Washington Hospital Center. He is Assistant Clinical Professor of Medicine at George Washington University School of Medicine.

Dr. Virgil T. DeVault, until recently Director of the Office of International Health of the American Medical Association, retired from this post, January 1, and will do consultative work in Washington, D. C.

OBITUARIES

Harry Zehner, M.D.

(1894–1969)

Dr. Harry Zehner, a Life member of the Medical Society of the District of Columbia, died, November 24, 1969, at his home, 2800 Bellevue Terrace, N.W. He had practiced in Washington for 43 years.

Dr. Zehner was born in Brooklyn, New York, January 21, 1894. Enrolling at Georgetown University for the study of medicine, he received his Bachelor of Science degree in 1923 and his medical degree in 1925. He interned at Georgetown University Hospital. Several years later he studied cardiology at Massachusetts General Hospital, Boston, and at the New York Academy of Medicine.

Limiting his practice to internal medicine and cardiology, Dr. Zehner practiced continually in Washington from 1926 until he retired early in 1969.

He was on the staff of Georgetown University School of Medicine as Instructor in Medicine from 1929 to 1952. Earlier he had taught pharmacology at Georgetown.

During World War II he was a medical consultant to the Washington Draft Board.

Dr. Zehner was elected to Active membership in the Medical Society of the District of Columbia in 1927 and became a Life member in 1965. Until his death he maintained a deep interest in Medical Society affairs and had served on many committees during the years of his long membership. He was a member of the American Medical Association, the Washington Heart Association, the Georgetown Clinical Society, and the Kober Medical Society, which he had served as President. He belonged to the P. M. Hiram Masonic Lodge and was a director of the Oriental Building Association.

He leaves his wife, Mrs. Marion Griffiths Zehner; a son, Dr. Harry Zehner, Jr., a member of the D.C. Medical Society; and a daughter, Mrs. John Lucas, of Macon, Ga. A sister, Miss May Zehner, of Brooklyn, New York, also survives him.

Edward Harvey Cushing, M.D.

(1898–1969)

Dr. Edward H. Cushing, formerly an official of the Defense Department and Veterans Administration, died, November 15, 1969. He lived at 1315 28th Street, N.W.

Dr. Cushing was born in Cleveland, Ohio, in 1898. He received his A.B. degree from Yale College in 1919 and graduated from Harvard Medical School in 1923. The following 2 years he interned at Presbyterian Hospital in New York City, then continued his training as resident physician for a year each at Lakeside Hospital in Cleveland and at Bellevue Hospital in New York.

He returned to Cleveland to practice, where he served on the staff of the University Hospitals as Associate Physician and as head of the Outpatient Department from 1939 to 1946. At Case-Western Reserve University he was Assistant Clinical Professor of Medicine from 1938 to 1946. In 1946 he assumed the same post at George Washington University and served on the faculty for several years.

During the war years he was on active duty as a Captain in the Naval Medical Corps. He was awarded the Philippine Legion of Merit and the U.S. Typhus Commission Medal for his work in testing DDT.

From 1946 to 1952 he was Director of Research and Education in the Department of Medicine and Surgery, Veterans Administration, where he initiated and supervised residency training and medical research programs. He was Deputy Assistant Secretary of Defense for health and medical affairs from 1955 to 1963, when he retired.

Dr. Cushing was elected to Active membership in the D.C. Medical Society in 1947 and became a Life member in 1969. He was a Fellow of the American College of Physicians, a diplomate of the American Board of Internal Medicine and the American Board of Cardiology, and a member of the American Medical Association, the American Society of Tropical Medicine, the American

Association for the Advancement of Science, the American Clinical and Climatological Society, the National Research Council, the Royal Society of Medicine of England, and other professional organizations. He was a member of the Army-Navy, Metropolitan, and Cosmos clubs.

He was a frequent contributor to scientific journals, and for many years a trustee of the Yale Medical Library.

He leaves 2 daughters, Mrs. Nathaniel L. Niles, of West Brattleboro, Vt., and Miss Barbara Cushing, of Washington.

Ernest Henry Aschenbach, M.D.

(1909–1969)

Dr. Ernest H. Aschenbach, general practitioner, died suddenly, October 16, 1969, aboard the *S.S. Raffaello* during the Georgetown Seminar cruise to the Mediterranean. He lived at 10 Bay Tree Lane in Bethesda, Md.

Dr. Aschenbach was born in Washington, D. C., April 3, 1909. A graduate of old Central High School, he received a B.S. degree from Catholic University of America in 1930 and a medical degree from Georgetown University in 1934. After interning for a year at Georgetown University Hospital he continued his training as a fellow in obstetrics at Georgetown, from 1935 to 1936.

Dr. Aschenbach was attending obstetrician at the Florence Crittenton Home from 1935 to 1940. He taught obstetrics at Georgetown from 1935 to 1946 and was an instructor at Catholic University Nursing School from 1936 to 1940. He was on the visiting staff of Georgetown Hospital and had staff privileges at Doctors and Providence Hospitals and at Columbia Hospital for Women.

An Active member of the Medical Society of the District of Columbia from 1949, he was also a member of the American Medical Association, the Georgetown Clinical Society, and the Medical Arts Society of Greater Washington. He had served on the Board of Catholic Charities.

Dr. Aschenbach leaves his wife, Mrs. Clara Chicona Aschenbach; 2 sons, Ernest H., Jr., and George Aschenbach; and 3 daughters, Joy, Valerie, and Mrs Maria Spottswood, all of Bethesda.

Sollie Katzman, M.D.

(1906–1969)

Dr. Sollie Katzman, anesthesiologist, died, November 11, 1969, in his apartment at 4201 Cathedral Avenue, N.W.

Dr. Katzman was born in Washington, D.C., December 1, 1906. A graduate of old Central High School, he received his medical degree from George Washington University School of Medicine in 1930. He interned at Baltimore City Hospital the following year, then practiced briefly in Silver Spring, Maryland. He trained as a resident in anesthesiology at Gallinger Municipal (now D.C. General) Hospital from 1932 to 1933.

Dr. Katzman had served as anesthesiologist at Sibley Hospital for about 35 years before retiring last April. He taught anesthesiology at George Washington University in the early 1930's. He also practiced at Columbia Hospital for Women, Children's, Casualty (now Rogers Memorial), Doctors, and George Washington University Hospitals.

Dr. Katzman was elected to Active membership in the Medical Society of the District of Columbia in 1934. He was a member of the American Medical Association, American Society of Anesthesiologists, International Anesthesia Research Society, and the Jacobi Medical Society. He was Secretary of Bowl America, Inc., of Arlington, Va.

Surviving him is a brother, Dr. Howard Katzman, of Chevy Chase, Maryland, who is First Vice President of the D.C. Medical Society.

Drug Addiction

(*Continued from page 114*)

dried up, is not nearly enough, he explained. For outside the prison or hospital the person who has used narcotics will find the same old world, the same old problems. Unless he is better equipped mentally to meet these, he will soon seek the same old escape.

New Members

(*Continued from page 116*)

Resident-Intern

Albert E. Rolle, M.D. Office: 50 Irving Street, N.W. Born in Miami, Fla. Medical degree: University of Pittsburgh, 1965. Specialty: General Surgery.

The Medical Society of the District of Columbia
1970

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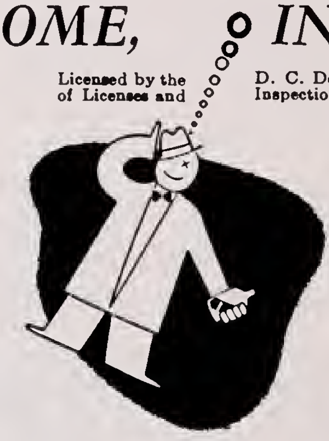

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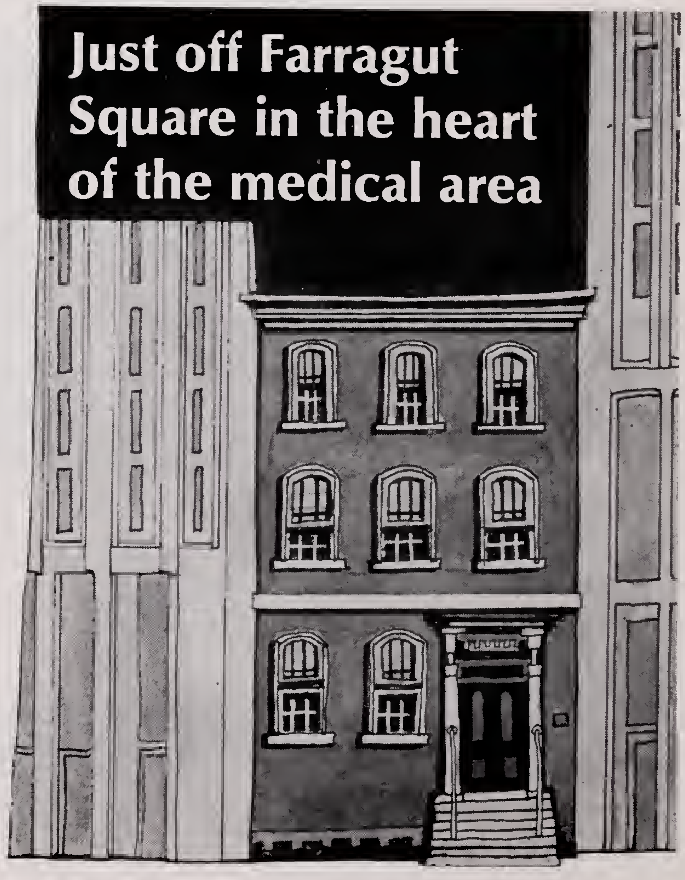
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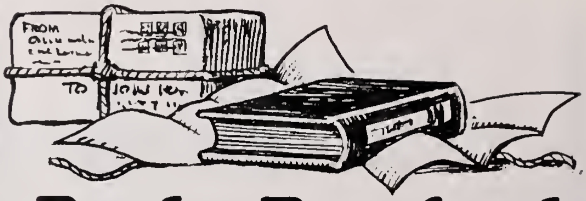

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The William Mackenzie Centenary Symposium on the Ocular Circulation in Health and Disease. Proceedings of a Symposium held at the Royal College of Physicians and Surgeons of Glasgow 23rd–24th September 1968. Edited by J. Stanley Cant. Price, $17.00. Pp. 270, illustrated. St. Louis: Mosby, 1969.

Personnel Administration and Labor Relations in Health Care Facilities. James O. Hepner, M.H.A., Ph.D., John M. Boyer, M.A., and Carl L. Westerhaus, M.S. Price, $15.00. Pp. 391. St. Louis: Mosby, 1969.

Proceedings of the Centennial Symposium Mahattan Eye, Ear and Throat Hospital. Volume One. Ophthalmology. Edited by Arnold I. Turtz, M.D. Price, $27.50. Pp. 331, with 247 illustrations. St. Louis: Mosby, 1969.

Proceedings of the Centennial Symposium Manhattan Eye, Ear and Throat Hospital. Volume Two. Otolaryngology. Edited by William F. Robbett, M.D. Price, $27.50. Pp. 342, with 453 illustrations. St. Louis: Mosby, 1969.

Crisis Fleeting—Original Reports on Military Medicine in India and Burma in the Second World War. Compiled and edited by James H. Stone. Price, $3.75. Pp. 423. Washington, D. C.: Office of the Surgeon General, Department of the Army, 1969.

Manic Depressive Illness. George Winokur, M.D., Paula J. Clayton, M.D., and Theodore Reich, M.D., C.M. Price (paper), $6.50. Pp. 186. St. Louis: Mosby, 1969.

Atlas of Obstetric Technic, 2nd ed. J. Robert Willson, M.D., M.S. Price, $19.75. Pp. 313, with 58 plates, including 375 illustrations by Daisy Stilwell. St. Louis: Mosby, 1969.

Circulatory and Respiratory Mass Transport. A Ciba Foundation Symposium. Edited by G. E. W. Wolstenholme and Julie Knight. Price, $12.50. Pp. 310, illustrated. Boston: Little, 1969.

Bacterial Episomes and Plasmids. A Ciba Foundation Symposium. Edited by G. E. W. Wolstenholme and Maeve O'Connor. Price, $12.50. Pp. 268. Boston: Little, 1969.

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pearance of edema. The drug h
been associated with peptic ul
and may reactivate a latent pep
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before or after meals or with m
minimize gastric upset. Drug ra
occasionally occurs. If it does,
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manent withdrawal of medica-
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mal white counts. Stomatitis
, rarely, salivary gland enlarge-
nt may require cessation of treat-
nt Such patients should not
erve subsequent courses of the
g Vomiting, vertigo and languor
y occur Leukemia and leukemoid
ctions have been reported While
definitely attributable to the
g a causal relationship cannot

be excluded Thrombocytopenic purpura and aplastic anemia may occur. Confusional states, agitation, headache, blurred vision, optic neuritis and transient hearing loss have been reported, as have hyperglycemia, hepatitis, jaundice, hypersensitivity angiitis, pericarditis and several cases of anuria, glomerulonephritis and hematuria With long-term use, reversible thyroid hyperplasia may occur infrequently. Moderate lowering of the red cell count due to hemodilution may occur

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Adverse Reactions: *Central Nervous System*—Drowsiness, especially with large doses, early in treatment; infrequently, pseudoparkinsonism and other extrapyramidal symptoms; nocturnal confusion, hyperactivity, lethargy, psychotic reactions, restlessness, and headache. *Autonomic Nervous System*—Dryness of mouth, blurred vision, constipation, nausea, vomiting, diarrhea, nasal stuffiness, and pallor. *Endocrine System*—Galactorrhea, breast engorgement, amenorrhea, inhibition of ejaculation, and peripheral edema. *Skin*—Dermatitis and skin eruptions of the urticarial type, photosensitivity. *Cardiovascular System*—Changes in the terminal portion of the electrocardiogram have been observed in some patients receiving the phenothiazine tranquilizers, including Mellaril (thioridazine). While there is no evidence at present that these changes are in any way precursors of any significant disturbance of cardiac rhythm, several sudden and unexpected deaths apparently due to cardiac arrest have occurred in patients previously showing electrocardiographic changes. The use of periodic electrocardiograms has been proposed but would appear to be of questionable value as a predictive device. *Other*—A single case described as parotid swelling.

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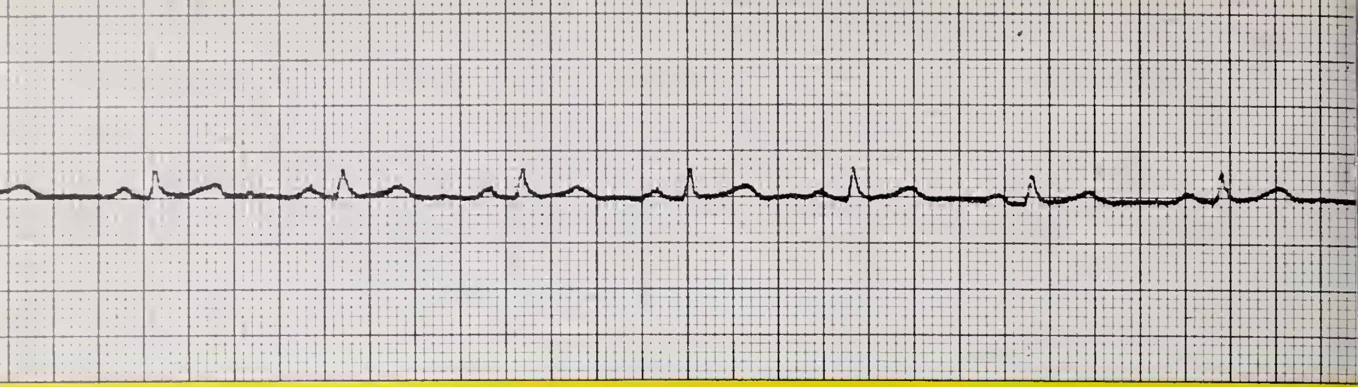

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Contraindicated: Known hypersensitivity to the drug. Children under 6 months of age. Acute narrow angle glaucoma.

Warnings: Not of value in psychotic patients. Caution against hazardous occupations requiring complete mental alertness. When used adjunctively in convulsive disorders, possibility of increase in frequency and/or severity of grand mal seizures may require increased dosage of standard anticonvulsant medication; abrupt withdrawal may be associated with temporary increase in frequency and/or severity of seizures. Advise against simultaneous ingestion of alcohol and other CNS depressants. Withdrawal symptoms have occurred following abrupt discontinuance. Keep addiction-prone individuals under careful surveillance because of their predisposition to habituation and dependence. In pregnancy, lactation or women of childbearing age, weigh potential benefit against possible hazard.

Precautions: If combined with other psychotropics or anticonvulsants, consider carefully pharmacology of agents employed. Usual precautions indicated in patients severely depressed, or with latent depression, or with suicidal tendencies. Observe usual precautions in impaired renal or hepatic function. Limit dosage to smallest effective amount in elderly and debilitated to preclude ataxia or oversedation.

Side Effects: Drowsiness, confusion, diplopia, hypotension, changes in libido, nausea, fatigue, depression, dysarthria, jaundice, skin rash, ataxia, constipation, headache, incontinence, changes in salivation, slurred speech, tremor, vertigo, urinary retention, blurred vision. Paradoxical reactions such as acute hyperexcited states, anxiety, hallucinations, increased muscle spasticity, insomnia, rage, sleep disturbances, stimulation, have been reported; should these occur, discontinue drug. Isolated reports of neutropenia, jaundice; periodic blood counts and liver function tests advisable during long-term therapy.

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Therapeutic Abortion in D. C.
E. J. Connor, M.D., and O. H. Aydinel, M.D.

Plethysmography and Carotid Compression
Hamid Sahebjami, M.D.

Primary Hyperlipoproteinemia
N. H. Isaacson, M.D., and J. Geiger, M.D.

Vaginal Acid Phosphatase
I. D. Godwin, M.D., and G. K. Seitz, M.D.

Aspiration of Breast Cysts
P. S. Putzki, M.D., J. H. P. Garnett, M.D.,
and H. Zehner, Jr., M.D.

Shock in Myocardial Infarction
Jay N. Cohn, M.D.

Anasarca and Dyspnea—CPC
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(*Complete Index on page 5*)

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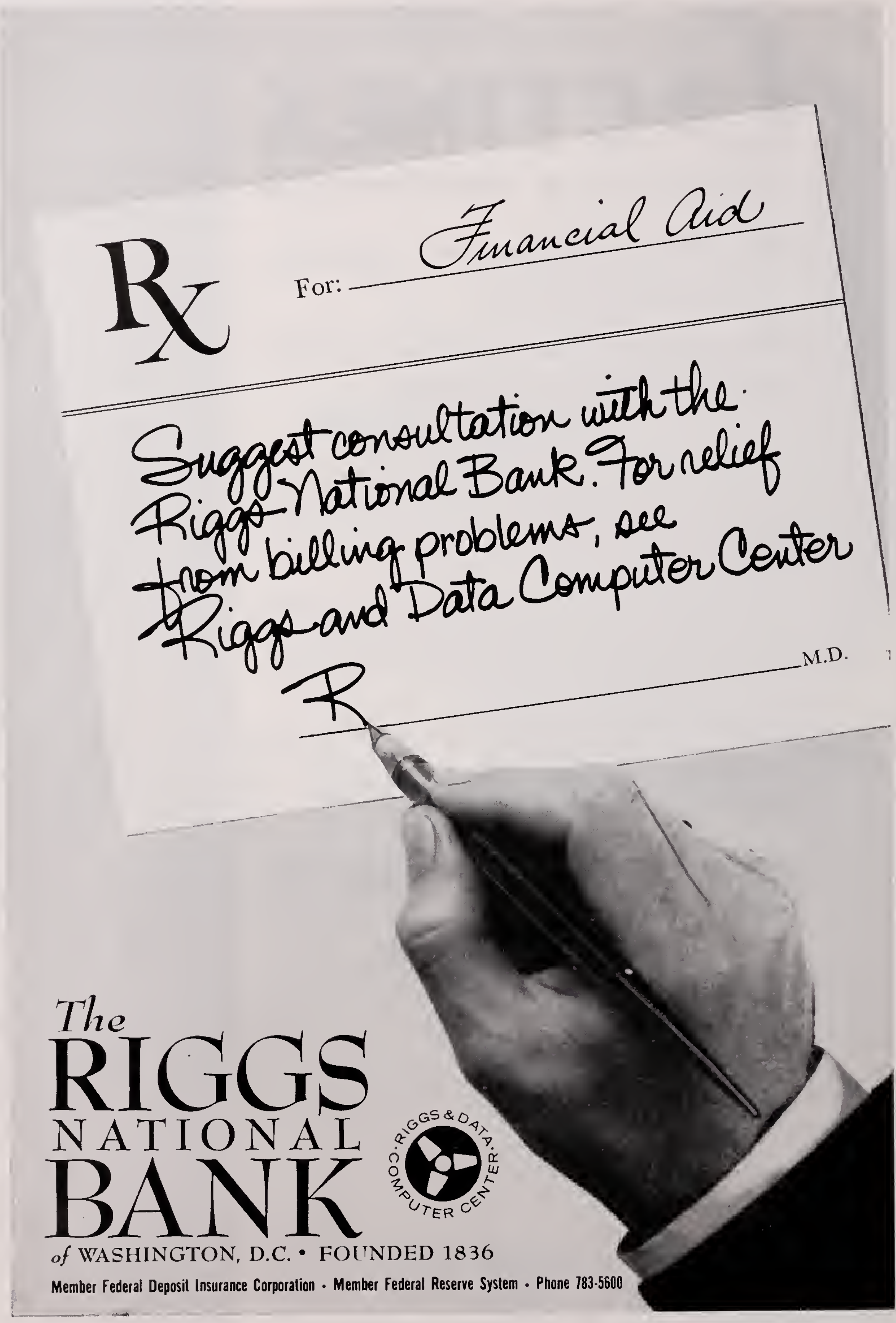

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Second-class postage paid at Baltimore, Md.
Published monthly at
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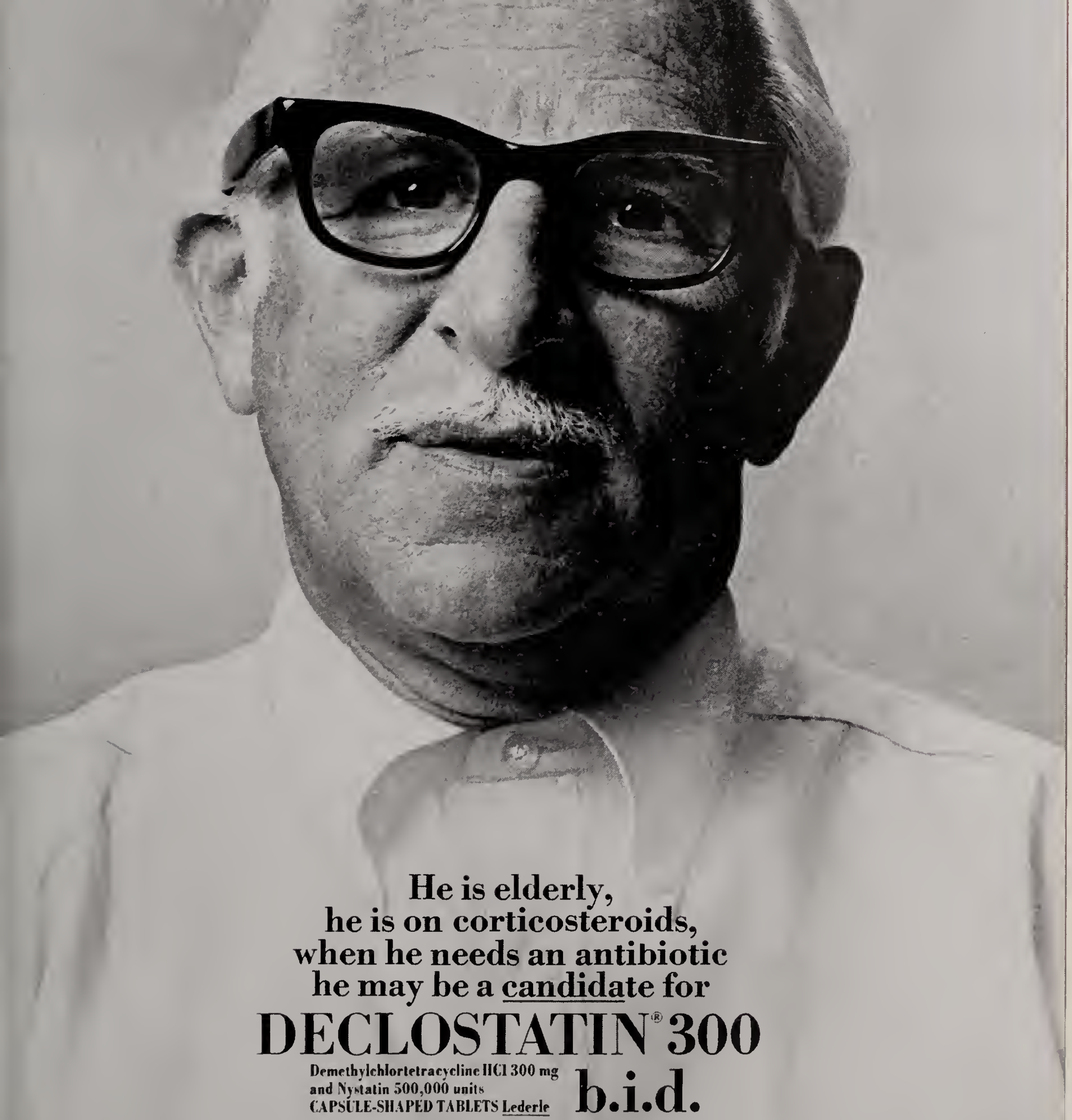

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should be carefully observed.

itions: Overgrowth of nonsusceptible organisms may occur. Constant observation is essential. If new infections appear, appropriate measures should be taken.

In infants, increased intracranial pressure with bulging fontanels has been observed. All signs and symptoms have disappeared rapidly upon cessation of treatment.

Side Effects: Gastrointestinal system—anorexia, nausea, vomiting, diarrhea, stomatitis, glossitis, enterocolitis, pruritus ani. Skin—maculopapular and erythematous rashes; a rare case of exfoliative dermatitis has been reported. Photosensitivity; onycholysis and discoloration of the nails (rare). Kidney—rise in BUN, apparently dose related. Transien increase in urinary output, sometimes accompanied by thirst (rare). Hypersensitivity reactions—urticaria, angioneurotic edema, anaphylaxis. Teeth—dental staining (yellow-brown) in children of mothers given th drug during the latter half of pregnancy, and in children given the dru during the neonatal period, infancy and early childhood. Enamel hypoplasia has been seen in a few children. If adverse reaction or idiosyncrasy occurs, discontinue medication and institute appropriate therapy.

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Contraindications: Children 14 years of age and under; pregnant women and nursing mothers; active gastrointestinal lesions or history of recurrent gastrointestinal lesions; allergy to aspirin and indomethacin.

Warnings: *Gastrointestinal Effects:* Because of the occurrence and, at times, severity of gastrointestinal reactions, be continuously alert for any sign or symptom signaling a possible gastrointestinal reaction. The risks of continuing therapy with INDOCIN in the face of such symptoms must be weighed against the possible benefits to the individual patient. Gastrointestinal effects may be reduced by giving the drug immediately after meals, with food, or with antacids. Use greater care in aging patients.
Ocular Effects: Corneal deposits and retinal disturbances, including those of the macula, have been observed in some patients on prolonged therapy. Discontinue therapy if such changes are observed. Ophthalmologic examination at periodic intervals is desirable in patients on prolonged therapy.
Central Nervous System Effects: INDOCIN (Indomethacin, MSD) may aggravate psychiatric disturbances, epilepsy, and parkinsonism, and should be used with considerable caution in patients with these conditions. If severe CNS reactions develop, discontinue the drug.

Precautions: Blurred vision may be a significant symptom that warrants a thorough ophthalmologic examination. Patients should be cautioned about engaging in activities requiring mental alertness and motor coordination, as driving a car. Headache which persists despite dosage reduction requires complete cessation of the drug. May mask the usual signs and symptoms of infection; therefore, the physician must be continually on the alert for this and should use the drug with extra care in the presence of existing controlled infection. After the acute phase of the disease is under control, an attempt to reduce the daily dose should be made repeatedly until the patient is off entirely.

Adverse Reactions: *Gastrointestinal Reactions:* Single or multiple ulcerations of the esophagus, stomach, duodenum, or small intestine, including perforation and hemorrhage, with fatalities in some instances; gastrointestinal bleeding without obvious ulcer formation, perforation of preexisting sigmoid lesions (diverticulum, carcinoma, etc.); rarely, increased abdominal pain in ulcerative colitis patients or development of ulcerative colitis and regional ileitis; gastritis, which may persist after the cessation of the drug; nausea, vomiting, anorexia, epigastric distress, abdominal pain, and diarrhea.
Eye Reactions: Corneal deposits and retinal disturbances, including those of the macula, have been observed on prolonged therapy; blurring of vision.
Hepatic Reactions: Rarely, toxic hepatitis and jaundice, including some fatal cases.
Hematologic Reactions: Aplastic anemia, hemolytic anemia, bone marrow depression, agranulocytosis, leukopenia, and thrombocytopenic purpura. Since some patients manifest anemia secondary to obvious or occult gastrointestinal bleeding, appropriate blood determinations are recommended.
Hypersensitivity Reactions: Acute respiratory distress, including dyspnea and asthma; angiitis; pruritus; urticaria; angioedema; skin rashes.
Ear Reactions: Hearing disturbances, deafness, tinnitus.
Central Nervous System Reactions: Psychotic episodes, depersonalization, depression, coma, convulsions, peripheral neuropathy, drowsiness, mental confusion, lightheadedness, dizziness, headache.
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2007 Eye Street, N.W. Washington, D.C. 20006

The **MEDICAL ANNALS OF THE DISTRICT OF COLUMBIA** is published monthly by the Medical Society of the District of Columbia for the promulgation of information of scientific, general medical and personal interest. All articles and correspondence should be sent to DR. WALLACE M. YATER, EDITOR, MEDICAL ANNALS OF THE DISTRICT OF COLUMBIA, 2007 Eye Street, N.W., Washington, D. C. 20006.

EXCLUSIVE PUBLICATION: Articles are accepted for publication on condition that they are contributed solely to this journal.

MANUSCRIPTS: Manuscripts must be typewritten, double-spaced, and the original copy submitted.

ILLUSTRATIONS: Photographs and drawings for illustrations must be carefully marked and show clearly what is intended. MEDICAL ANNALS will bear the cost of engravings for 2 illustrations accompanying manuscripts submitted for publication. The cost of more than 2 engravings must be borne by the author.

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SUBSCRIPTIONS: Subscription is included in the annual dues of members. To non-members the annual subscription price is: domestic, $8.00; Canadian, $8.50; foreign, $9.00, including postage; single copies, 75 cents.

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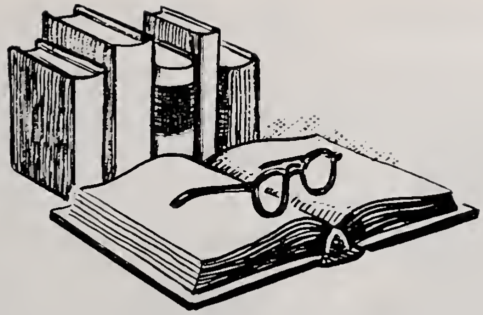

Book Reviews

Microneurosurgery. Robert W. Rand, Ph.D., M.D., with 16 contributors. Price, $25.00. Pp. 224, with 257 illustrations, including 1 color plate. St. Louis: Mosby, 1969.

This book, one of the first texts in the rapidly expanding field of microneurosurgery, represents a welcome and badly needed addition to neurosurgical writing.

The first 4 chapters provide a lucid and detailed introduction to the subject with general discussions of microanatomy, instrumentation, and applications of microneurosurgery. The discussion of the Zeiss Type I surgical microscope is especially valuable. Unfortunately, evaluation of the relative merits of the newer Type II scope awaits a subsequent edition.

The following 13 chapters, written by a variety of authors, provide a widely based presentation of most of the operations commonly performed with the surgical microscope. These include 3 chapters on acoustic tumors and 3 on microvascular surgery. The quality of these chapters is necessarily uneven, some representing an embellishment of previously published papers by the same authors; however, all common procedures are amply and conveniently described.

A possible exception to the above generalization is, I believe, a parochial presentation of the microsurgery of peripheral nerves. This chapter, written by a plastic surgeon, probably reflects a surgical experience biased toward forearm and hand nerves. The bibliography is notable for the absence of reference to one of the foremost workers in the field, Dr. S. Sunderland.

This book contains clear, nicely reproduced illustrations with a well-written text. Its minor deficiencies do not detract from its general usefulness, and it certainly will become a standard reference. It should be found in all neurosurgical libraries.

Glenn A. Meyer, M.D.

At Your Own Risk: The Case Against Chiropractic. Ralph Lee Smith. Price, $4.95. Pp. 179. New York: Trident, 1969.

"My experience," writes Mr. Smith, "has been that most people . . . do not know what a doctor of chiropractic is." He may well have added that many physicians are probably among them. This small volume, written by a nonphysician, is intended to inform the non-cognoscenti. Surely, it will not convert the faithful, who make an estimated 3 million visits annually to chiropractors across the Nation. The author has a well-nurtured disenchantment for flim-flam and wastes little time taking on what he calls the "only legalized superstition in the United States."

We learn that chiropractic is pure hokum, and yet in spite of its laughable credentials it manages successfully to carry off its insouciant masquerade as a scientifically based healing art even in this age of "tell it like it is." The success of this sleight of hand Mr. Smith attributes to the state legislatures (all but 2) who have given chiropractic the legal status of a profession, with very few questions asked. The otherwise uninformed public simply takes it from there.

Mr. Smith scrutinizes the academic halls of chiropractic, its clinics, conventions, and private offices, and chiropractic comes off very badly indeed. There seems to be plenty of art but very little science. What art there is derives from and has a kinship with the unembarrassed salesmanship of the snake-oil drummer of a bygone day.

One is left with more than a mild frustration about what to do about chiropractic. Apparently, every legal attempt to knock it into a cocked hat has only demonstrated its resilience. To appeal to our solons appears futile, and possibly counterproductive. (You never know when your Congressman or assemblyman may also be a chiropractor or a chiropractor's loyal "patient.")

Given the tenor of the times, it is lamentably predictable that this interesting exposé, with all its typographical errors, will hardly lead to a Congressional investigation of chiropractic. In fact, unlike artificially unsweetened soda pop, we may expect to have chiropractic uninterruptedly with us for a long, long time.

George A. Tralka, M.D.

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VOLUME XXXIX • NUMBER 3

Therapeutic Abortion—Washington, D. C.

EDWARD J. CONNOR, M.D., F.A.C.O.G.,* AND ORHAN H. AYDINEL, M.D., F.A.C.O.G.†

THERAPEUTIC ABORTION is defined in Eastman's textbook as the instrumental termination of pregnancy because of some grave maternal disease which would make the continuation of gestation extremely hazardous. It is a paradox that with the rapid progress in medicine medical indications for therapeutic abortions are now rare and fetal indications should become much fewer in the near future. However, the number of therapeutic abortions is increasing due to the pretense of doubtful psychiatric indications.

There is a clamor for abortion on demand which would change our present medical practices and ethics.

Many 'therapeutic abortions' actually violate the Abortion Law of the District of Columbia and the American Medical Association's policy on therapeutic abortions. The purpose of this paper is to attempt to clarify much of the confusion concerning therapeutic abortion and to plead with our fellow physicians to proceed carefully in this area, especially in law reforms concerning therapeutic abortion and any policies concerning abortion on demand.

Possible Indications for Therapeutic Abortion[1-4]

1. Rheumatic heart disease. Severe disease with the history of previous decompensation may be a valid indication. However, Gorenberg and Chesley's experience at Margaret Hague Maternity Hospital was that any patient with heart disease seen early enough to be aborted was seen early enough to be carried successfully through the pregnancy if she would abide by certain rules.[5]

2. Advanced hypertensive vascular disease. Cosgrove[6] stated that advanced fixed hypertensive disease was one of the most valid indications for abortion.

3. Carcinoma of the breast or of the ovary. If the prognosis would improve or if a remission of the disease would probably occur abortion may be indicated.

4. Carcinoma of the cervix. Invasive cervical cancer must be treated immediately in most cases, and abortion may be necessary.

5. Tuberculosis. This certainly would be uncommon. Schaefer, Douglas and Dreisphoon[7] stated that the course of the disease is not usually improved by therapeutic abortion.

6. Renal disease. Chronic glomerulonephritis or polycystic disease of the kidney are proper indications for abortion.

7. Hyperemesis gravidarum, diabetes mellitus, neurologic disorders, gastrointestinal diseases, etc. are now uncommon indications.

8. Potential abnormalities of the fetus.

(a) For rubella the overall risk of fetal abnormality is 20 per cent.[4, 8, 9] This risk is greatest during the first 4 weeks, when it approaches 60 per cent, and then it falls rapidly to about 7 per cent at the thirteenth to sixteenth week.[10] During an epidemic if an attack has been documented by a reliable physician during the first 8 weeks of pregnancy and the diagnosis is beyond question and the parents are unwilling to assume a calculated risk, abortion may be justified. Fortunately, with rubella immunization this may no longer be a problem.

(b) Drug effect. Thalidomide, Aminopterin® and busulfan are known to cause congenital anomalies on occasion. With other drugs there may be also a risk of embryopathy if they are taken during critical periods of the gestation.

(c) X-ray effect. There is evidence of lethal and teratogenic effects of X-rays. As little as 25 r to the pelvis in early human gestation may be sufficient to cause fetal injury.

(d) Erythroblastosis. In cases in which there have been previous stillbirths and the husband is almost certainly homozygous and there is strong serologic evidence of immunization, abortion may be indicated. However, with the present use of amniocentesis, intrauterine transfusions, and RhoGam® these cases should decrease in number.

---

* Chairman, Department of Obstetrics and Gynecology, Cafritz Memorial Hospital, Washington; office: 4400 Stamp Road at St. Barnabas Road, S.E., Washington, D. C. 20031.

† Chairman, Sterilization and Abortion Committee, Cafritz Memorial Hospital; office: 103 Audrey Lane, S.E., Washington, D. C. 20021.

9. Psychiatric conditions. These are now given as the indication for most therapeutic abortions. Approximately 95 per cent of the therapeutic abortions performed in the District of Columbia are done for alleged psychiatric reasons. Simon[3] lists the 4 following statements in regard to interruption of pregnancy for psychiatric reasons:

(a) The psychiatrist because of demands of time may have to render judgment without adequate clinical observation. He must maintain an objective point of view or else he may become the "unwilling accomplice" and the obstetrician subsequently the "unwilling executioner."

(b) Serious psychotic decompensations requiring commitment in a psychiatric hospital are not common during pregnancy.

(c) It is virtually impossible to ascertain accurately whether a woman is suicidal. However, the incidence of actual suicides during pregnancy is very low considering the number of women seeking abortion.

(d) It is a wise obstetric practice to insist, in general, that therapeutic sterilization accompany therapeutic abortion for psychiatric indications unless unequivocal and acceptable reasons are presented to contraindicate the sterilization. Some well-educated married women seeking abortion for psychiatric reasons admit their inability to utilize effective contraceptive techniques even after careful medical instructions. Ekblad[11] reported that 40 per cent of the Swedish married women who had had a legal abortion for psychiatric reasons unintentionally became pregnant again in less than 2 years despite careful contraceptive teaching.

Abortion for psychiatric reasons is sanctioned by law and should be done only if the mother is likely to commit suicide or if a high possibility of psychiatric decompensation is apt to occur.

Psychiatrists vary as to their indications for therapeutic abortions. Sim[12] states that "There are no psychiatric grounds for termination of pregnancy," but other psychiatrists seem to believe that psychasthenia, anxiety neurosis, and most situational depressions are adequate indication to terminate a gestation.[3, 13]

10. Socioeconomic reasons. Eastman states that neither the law nor medical ethics permits therapeutic abortion for sociologic reasons, such as illegitimacy, poverty and rape.

11. Demand. In a recent poll conducted by the American College of Obstetricians and Gynecologists more than 70 per cent of the physicians polled were against abortion on demand.[14] Dr. Dunn states that in countries with abortion on demand it has caused immense problems.[15] Dr. Overstreet[16] states that traditionally no patient demands a specific therapy from a doctor; she presents the medical problem to him and he selects the proper therapeutic modality. For abortion on demand, the doctor is needed to perform technically but is asked to be responsible for a purely sociologic decision regarding its justification.

Incidence of Therapeutic Abortion

The incidence varies greatly among institutions depending on religious affiliations, private patients, ward patients, etc. In New York City hospitals in the period from 1960 to 1962[17] the ratios of therapeutic abortions to live births were:

Proprietary hospitals	1:250
Private hospitals, private services	1:400
Private hospitals, ward services	1:1,400
Municipal hospitals	1:10,000

Eastman[1] states that a therapeutic abortion is probably indicated in 1 of 500 live births. Jeffcoate[18] states that a real justification for therapeutic abortion does not arise more than once in a thousand pregnancies.

The American College of Obstetricians and Gynecologists Manual states that the incidence of therapeutic abortions rarely exceeds 1 in 200 pregnancies in well-conducted practices and hospitals.[19]

During the first year of Colorado's new abortion law, April 25, 1967 to April 24, 1968, there were 35,000 live births and 407 therapeutic abortions, or 11.6 abortions per 1,000 live births.[20]

Abortions in Colorado under New Law, 1967–1968

Indications	*No.*	*Per cent*
Psychiatric	291	71.5
Fetal	47	11.5
Rape	46	11.5
Physical health of mother	23	5.5

Results of Therapeutic Abortions

1. Suicide. To abort patients to prevent their committing suicide is not valid. As stated, it is impossible to ascertain if a woman is suicidal during pregnancy. The incidence of suicides in pregnant women is very low. Barno[21] reported

14 suicides among pregnant women who had 1,301,745 live children, or 1 per 92,982 live births. Not one of the suicides was a woman illegitimately pregnant, and not one had requested a therapeutic abortion. Greenhill[22] cites the low incidence of suicides among pregnant women. In a New York series it was one-tenth the rate of the total female population.

In Hook's series[23] of 249 women who were refused abortion there were no suicides or suicide attempts in the follow-up period, although 2 per cent of the women had previously made attempts unassociated with the pregnancy.

2. Criminal abortions. Liberalization of the indications for therapeutic abortion does not decrease the number of criminal abortions.[16, 20] There is evidence that it may even increase the number of illegal abortions.[22] This may be because people's attitudes change concerning terminating life after abortion laws are liberalized.

3. Population control. When widespread abortion is introduced, people depend less on contraception, and usually the total pregnancy rate increases. In the absence of contraception 2 or 3 abortions are required to prevent 1 birth.[24, 25] Abortion is a poor substitute for contraception for population control.[26]

4. Medical practice. The British Abortion Act was passed despite opposition of the British Medical Association and the Royal College of Obstetricians and Gynecologists.[15] The impact of the British Abortion Act is making great demands on personnel, hospital beds, and operating time. The whole character of gynecologic practice is being altered.[27] Nursing homes are being converted into "abortoria" in order to meet the demands for abortions. Professor J. A. Stallworthy[28] states that the Abortion Act is affecting the international regard for British medicine and ethics. All these changes could rapidly occur in the United States despite the opposition of the majority of physicians if we are not careful.

Complications

Operations for therapeutic abortion are not without intrinsic danger, and it must be indisputably validated that the risks involved in the continuation of the pregnancy are greater than the hazards of the operative procedure. In Denmark, among 23,666 therapeutic abortions the mortality rate was 0.7 per 1,000 operations, while serious but nonfatal sequelae ensued in 3.2 per cent. Sequelae included 82 cases of uterine perforation, 122 cases of salpingitis, peritonitis and septicemia, and 113 cases of nonfatal but serious complications followed 5,320 abdominal hysterotomies, a 2.1 per cent complication rate.[29]

Yugoslavian figures suggest an overall morbidity of 5 per cent. Immediate complications are sepsis, embolism, hemorrhage, and renal failure. Late complications are chronic pelvic inflammatory disease, ruptured uterus in subsequent pregnancies, and infertility. There is all too little information about the immediate and delayed psychiatric sequelae.[28]

Abortion Laws

The present District of Columbia Law concerning abortion states:

> "22-201. Definition and penalty. Whoever, by means of any instrument, medicine, drug or other means whatever, procures or produces, or attempts to procure or produce an abortion or miscarriage on any woman, unless the same were done as necessary for the preservation of the mother's life or health and under the direction of a competent licensed practitioner of medicine, shall be imprisoned in the penitentiary not less than 1 year or not more than 10 years; or if the death of the mother results therefrom, the person procuring or producing, or attempting to procure or produce the abortion or miscarriage shall be guilty of second-degree murder."

The American Medical Association policy on therapeutic abortion follows:

> "The American Medical Association is cognizant of the fact that there is no consensus among physicians regarding the medical indications for therapeutic abortion. However, the majority of physicians believe that, in the light of recent advances in scientific medical knowledge, there may be substantial medical evidence brought forth in the evaluation of an occasional obstetric patient which would warrant the institution of therapeutic abortion either to safeguard health or life of the patient, or to prevent the birth of a severely crippled, deformed, or abnormal infant.
>
> "Under these special circumstances it is consistent with the policy of the American Medical Association for a licensed physician, in a hospital accredited by the Joint Commission on Accreditation of Hospitals, and in consultation with 2 other physicians chosen because of their recognized professional competence who have examined the patient and have concurred in writing, to be permitted to prescribe and administer treatment for his patient commensurate with sound medical judgment and currently established scientific knowledge.
>
> "Prior to the institution of a therapeutic abortion the patient and her family should be fully advised of the medical implications and the possible untoward emotional and physical sequelae of the procedure.

"In view of the above, and recognizing that there are many physicians who on moral or religious grounds oppose therapeutic abortion under any circumstances, the American Medical Association is opposed to induced abortion except when:

1. There is documented medical evidence that continuance of the pregnancy may threaten the health or life of the mother, or

2. There is documented medical evidence that the infant may be born with incapacitating physical deformity or mental deficiency, or

3. There is documented medical evidence that continuance of a pregnancy, resulting from legally established statutory or forcible rape or incest may constitute a threat to the mental or physical health of the patient, and when

4. Two other physicians chosen because of their recognized professional competence have examined the patient and have concurred in writing, and

5. The procedure is performed in a hospital accredited by the Joint Commission on Accreditation of Hospitals.

"It is to be considered consistent with the principles of ethics of the American Medical Association for physicians to provide medical information to State Legislatures in their consideration of revision and/or the development of new legislation regarding therapeutic abortion."[30]

Proposed Amendments to the Present District of Columbia Abortion Law

The Government of the District of Columbia has been asked to sponsor one of 2 proposed amendments to the existing law relating to abortions (D. C. Code, Section 22-201) which presently reads as follows:

"Whoever, by means of any instrument, medicine, drug or other means whatever, procures or produces, or attempts to procure or produce an abortion or miscarriage on any woman, unless the same were done *as necessary for the preservation of the mother's life or health and* under the direction of a competent licensed practitioner of medicine, shall be imprisoned in the penitentiary not less than 1 year or not more than 10 years; or if the death of the mother results therefrom, the person procuring or producing, or attempting to procure or produce the abortion or miscarriage shall be guilty of second-degree murder."

Proposed Amendment A strikes out the italicized words.

Amendment B would allow an abortion to be accomplished only in a licensed or Government-operated hospital by a licensed physician in consultation with 2 other physicians who concur in writing on the need for the operation: (1) to safeguard the life or the physical or mental health of the mother; (2) to prevent the birth of a child likely to suffer grave and permanent physical deformity or mental deficiency; or (3) to terminate pregnancies resulting from rape or incest where requested.

The present District of Columbia Abortion Law should not be changed but rather enforced.

Proposed Amendment A would be a license for a multitude of abortions by certain physicians. Professor Keith Simpson states that the British Abortion Act, assuming that all doctors would act in good faith, made a risky assumption, and the existing law is a charter for the professional medical abortionist.[28]

Proposed Amendment B follows the outline of the Model Penal Code of the American Law Institute and most of the revised abortion laws that have recently passed. This proposed amendment certainly would have merit if it were adopted and followed as outlined. However, any change in the present law would probably be interpreted by many as a green light to perform even more therapeutic abortions with questionable indications.

Discussion

Below is a letter written to Dr. Frank S. Bacon, President of the D. C. Medical Society, by Dr. Harry S. Douglas, Chairman of the Maternal Welfare Committee of the District of Columbia, which presents many of the problems concerning therapeutic abortions that are now being performed in the District of Columbia hospitals.

April 23, 1969

"DEAR DR. BACON:

"Regarding therapeutic abortions in the District of Columbia: They are being done in Sibley, Columbia, and George Washington Hospitals, the Washington Hospital Center, etc., excluding Catholic hospitals and the D. C. General Hospital. The only legal guide is the 'vague D. C. statute.'

"Hospitals average between 20 and 50 therapeutic abortions a month. Indications are about 95 per cent on a psychiatric basis and the rest on medical indications, German measles principally. The procedure is fairly distributed among most obstetrician-gynecologists. The variation is from none among Catholic practitioners and those whose personal scruples interdict this procedure to the rest who do not hesitate when supported by psychiatric consultation. There are few who can afford the price for psychiatric consultation that are turned down. There are none done at D. C. General.

"The greater number of candidates run between 8 to 12 weeks of gestation. The procedure is made available to even later pregnancies by the use of vacuum extraction of uterine contents.

"There is usually no psychiatric follow-up of patients.

"Information is not easy to obtain. The above facts were collected over a period of months.

Respectfully,
Harry S. Douglas, M.D."

This letter certainly exemplifies many of the problems that we face concerning therapeutic abortion:

1. There are too many therapeutic abortions being done. The exact number cannot be obtained but is probably greater than 1,000 per year. There are probably more therapeutic abortions being done in Washington D. C. than there are in Maryland, Colorado and North Carolina that have so-called "liberalized abortion laws." This may well make Washington D. C., the Nation's Capital, the "abortion center" of the United States.

2. There seems to be little or no follow-up of these patients. This is certainly contrary to good medical practice.

3. It is a medical procedure restricted mainly to the affluent sector of our society.[17, 31]

4. It is extremely difficult to obtain hospital statistics relating to therapeutic abortions—numbers done, indications, complications, etc.[31]

It is suggested that individual hospitals be required by the D. C. Department of Public Health and the D. C. Medical Society to do the following:

1. List their indications for therapeutic abortions and have Abortion Committees supervise their actions.

2. Report yearly the number, the indications, and the complications for therapeutic abortions done in each hospital.

3. That cases involving therapeutic abortions be presented and discussed at the hospital Perinatal Mortality Conferences, and that this fetal wastage be included in the hospital's yearly statistics.

4. That any case of therapeutic abortion done for psychiatric indication have accompanying the request a statement why therapeutic sterilization should not be also performed and an outline of planned psychiatric follow-up that will be carried out after the abortion.

Following the abortion, and after a period of time, e.g., 6 months, or when the psychiatric treatment is terminated, a statement from the psychiatrist evaluating the outcome of the treatment and the patient's prognosis should be required. This statement would become a part of the patient's hospital record and would be available for future evaluation of this subject.

The termination of pregnancy must be considered just the beginning of treatment. Physicians must use all available resources to enable the patient and her family to deal with the situation that preceded the pregnancy so that the same circumstances will not be repeated.[12]

K. T. MacFarlane asks if our approach to mental distress by therapeutic abortion is logical. Abortion may relieve various "distress reactions" encountered during pregnancy, but it is questionable that it would do so to a higher degree than that of proper therapy in an improved environment.[20]

Conclusions

There are too many therapeutic abortions being done in the District of Columbia. Many are performed in defiance of the District of Columbia Abortion Law. Liberalizing the indications for therapeutic abortions does not decrease criminal abortions nor suicides. Therapeutic abortion is not an effective means of population control. There are a certain per cent of severe complications, even death, associated with therapeutic abortions. Termination of pregnancy for psychiatric reasons should be just the beginning of treatment.

Abortion on demand is contrary to medical practice and is associated with many medical and legal problems. Abortion on demand would overtax our present hospital facilities and our teaching programs. Abortion on demand would degrade the medical profession in the United States.

Any pregnant woman with enough money can have her pregnancy terminated.[32] Therapeutic abortion for the estimated 18,000[3] U. S. women per year is a prerequisite mostly of the well-to-do, educated, middle and upper classes.

Contraception is the antidote for the ill requiring therapeutic abortion.[2]

Addendum: This article was written and submitted for publication prior to Judge Gerhard Gesell's decision on November 10, 1969, voiding the District of Columbia's Abortion Law of 1901. At the present time the District of Columbia is in the deplorable predicament of having no abortion statute. This is a panacea for the medical abortionist. We sincerely hope that the U. S. Attorney's Office will appeal and will have Judge Gesell's ruling reversed by a higher court in the near future.

(Continued on page 186)

Photoelectric Plethysmography and Carotid Compression

A Preliminary Report*

HAMID SAHEBJAMI, M.D.†

PARTIAL OR COMPLETE OCCLUSION of the carotid arteries is a common cause of cerebral vascular accidents. With the great improvements that have occurred in vascular surgery during recent years the need for diagnostic and screening methods for the detection of occlusive lesions of the carotid arteries has become more pressing. While carotid arteriography is the most reliable and the most crucial diagnostic test, its appreciable morbidity and mortality limit its use and it is not justified as a routine procedure in all cases of stroke. Many different tests have been described and applied for this purpose, such as digital carotid compression,[1, 2, 3] carotid compression with encephalography,[4] thermography,[5] fluorescein retinal angiography,[6, 7] electromagnetic techniques,[8] carotid flow and pressure measurements,[9] ophthalmodynamometry,[10] ophthalmodynamography,[11] ocular plethysmography,[12] ultrasonic Doppler technique,[13, 14] carotid compression tonography,[15] hemodensitometry,[16] sphygmopiezography,[17] etc., each with its own advantages and limitations.

This paper presents photoelectric plethysmography with carotid compression as a new dynamic technique for the evaluation of carotid blood flow and selection of patients for arteriography and reports the results of the test on 50 healthy young male volunteers between 20 and 38 years of age.

Principle and Method

Local blood flow through the skin of the capillary bed reflects the status of the adjacent deeper arterial circulation. The integrity of the superficial vascular plexus is dependent upon its direct anatomic and functional continuity with the deeper vessels. Therefore, blood flow through the internal carotid artery can be evaluated by measurements of its superficial components, the branches of the ophthalmic artery. By means of photoelectric plethysmography of the supraorbital arteries, measurements of capillary blood flow in the skin of the forehead can be related to carotid blood flow.

The subject is placed in a supine posture. Paired sensors containing an incandescent light bulb and a photoelectric cell are attached to the skin of the forehead 2 cm. from the midline and 2 cm. above the supraorbital margin by means of interposed translucent adhesive tapes. Light passing into the tissue is reflected out, reaches the photosensor, and causes a change in its resistance, which is measured through a Wheatstone bridge arrangement and is graphically presented on an oscilloscope or polygraph (figure 1). After standard tracings are taken each common carotid artery is compressed separately for 3 to 5 seconds. The amount of light reflected back to the photoelectric cell will depend upon the amount absorbed by the underlying tissues, and this varies with changes in the amount of blood present in the capillaries and, to a lesser extent, with the oxygen content of the blood.[18]

Results

The arterial pulse wave depends upon cardiac action and the elastic response of the aorta to the reception of the bolus of blood. The peak of the pulse wave is related to the end of the ventricular systole, and the dicrotic notch on the descending portion of the wave represents aortic valve closure. Factors influencing the pulse volume are: (a) the cardiac output, (b) the resistance to flow between the heart and ophthalmic artery (which depends in part upon the length of the vessel, the radius of the vessels, the elasticity of the vascular wall, and the blood viscosity), and (c) the peripheral vascular resistance.[16]

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* The author received First Prize for this paper in the 1969 Dr. Philip Burka Awards and Citations at the Annual Membership Luncheon of the Medical Society of the District of Columbia, September 24, 1969.

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The pulse curves are, therefore, a dynamic expression of the changing volume of blood in the tissue bed immediately beneath the transducers. Polarity is so arranged that the height of the curve at any given time is proportional to the amount of blood present in the tissues.

Review of the tracings obtained from 50 normal young males reveals that under normal conditions carotid compression provokes a fall in the supraorbital artery flow which is reflected in the tracings by reduction of the amplitude or flattening of the pulse curve from the homolateral side (figure 2). When the carotid is released the pulse amplitude returns to the same level as before compression, or occasionally above the level for 1 or 2 beats. In 20 of the subjects we noticed some degree of diminution in pulse amplitude recorded from the contralateral side during carotid compression. The possibility of carotid sinus response was considered because, in the presence of atheromatous vessels a sinus response may result from compression of the common carotid artery. This possibility is not likely in this study because of the youth of the test subjects.

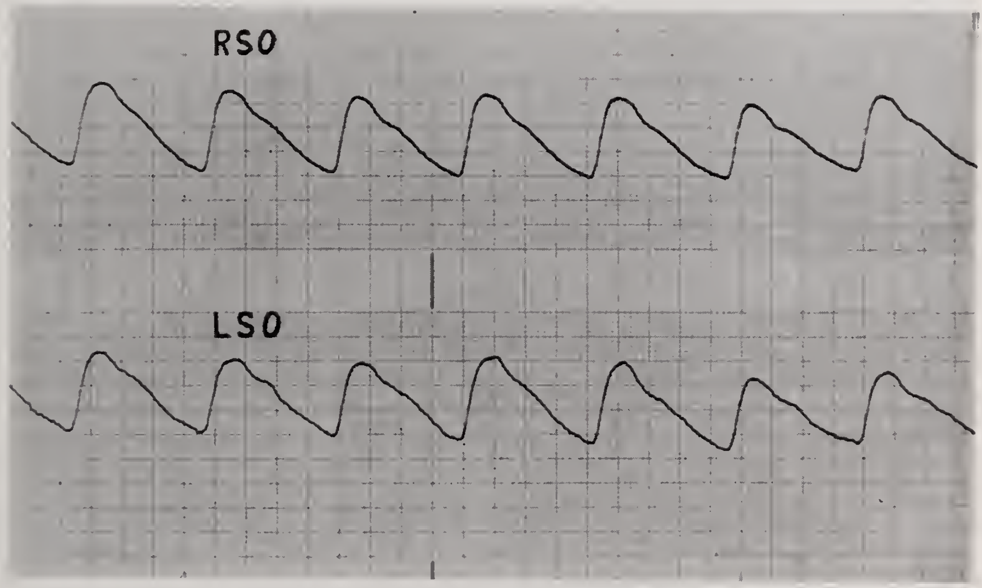

FIG. 1. Photoelectric plethysmographic tracings of right supraorbital (RSO) and left supraorbital (LSO) arteries.

In order to standardize changes in pulse curves before and after carotid artery compression in the homo- and contralateral sides and to evaluate normal variations for comparison in abnormal situations, tracings of all 50 subjects were critically analyzed and the following ratios were constructed to measure the relative amount of blood flow in the carotid arteries. The amplitude of each pulse curve in centimeters was taken arbitrarily as representing the relative blood flow (figure 3):

RSO_1 = Amplitude of the pulse wave in the right supraorbital area.
LSO_1 = Amplitude of the pulse wave in the left supraorbital area.
RSO_2 = Amplitude of the pulse wave in the right supraorbital area during right carotid artery compression.
LSO_2 = Amplitude of the pulse wave in the left supraorbital area during right carotid artery compression.
$R'SO_2$ = Amplitude of the pulse wave in the right supraorbital area during left carotid artery compression.
$L'SO_2$ = Amplitude of the pulse wave in the left supraorbital area during left carotid artery compression.

$$\frac{LSO_1 - LSO_2}{RSO_1 - RSO_2} \times 100$$ = Per cent of diminution of flow in the left supraorbital area during right carotid artery compression (normal 0–80 per cent).

$$\frac{RSO_1 - R'SO_2}{LSO_1 - L'SO_2} \times 100$$ = Per cent of diminution of flow in the right supraorbital area during left carotid artery compression (normal 0–80 per cent).

According to these measurements, in normal subjects the amplitude reduction on the side contralateral to carotid artery compression should not exceed 80 per cent of that found on the homolateral side. Therefore, by simple measurement of the height of the supraorbital pulse curves before and during carotid artery compression on both sides the normal range would vary between 0 and 80 per cent, and above this limit should be considered abnormal.

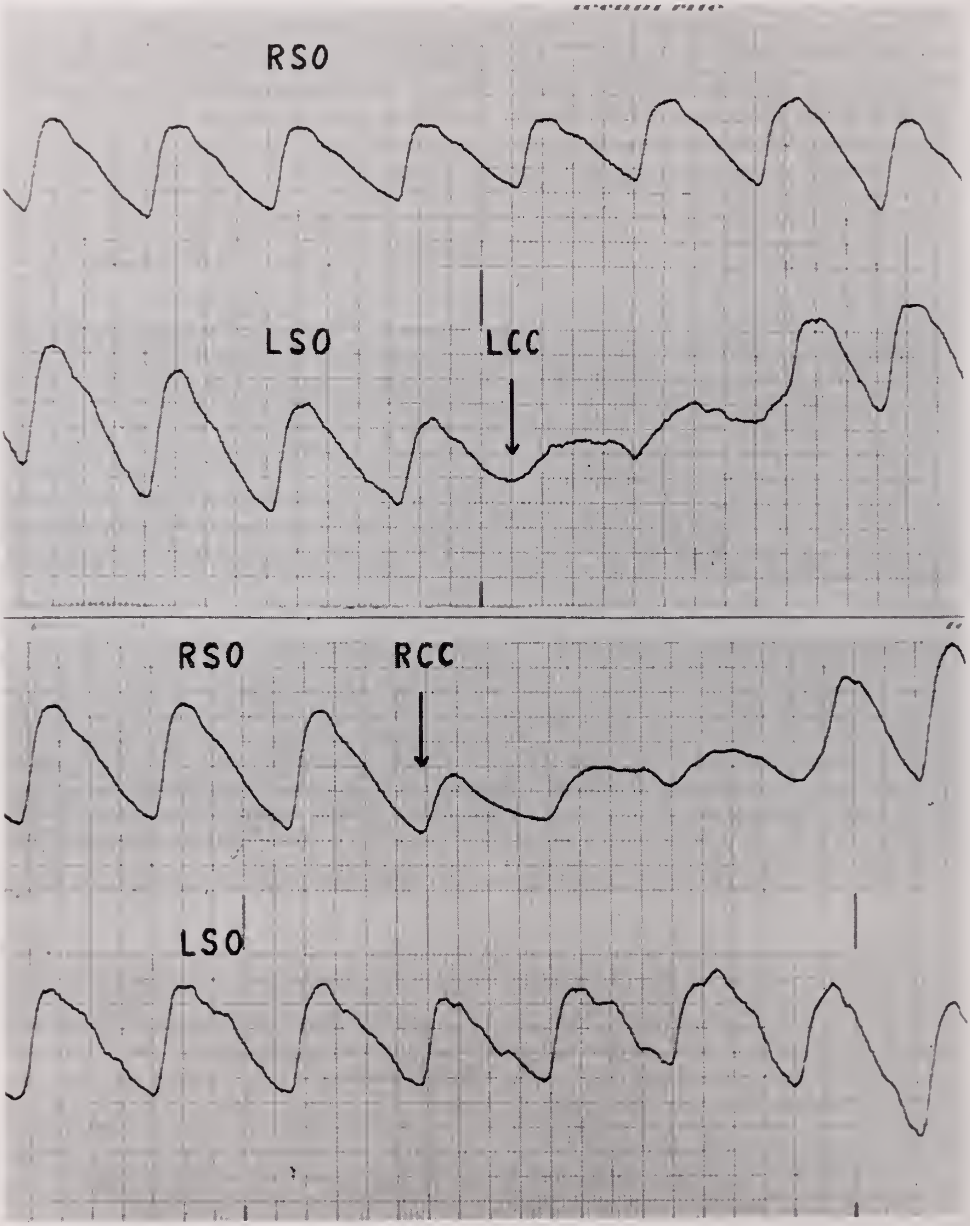

FIG. 2. Manual compression of left common carotid (LCC) and right common carotid (RCC) arteries are accompanied by reduction in pulse curves amplitude in homolateral side with some degree of diminution in contralateral side of compression.

The same basic study has been made on 100 elderly subjects above 60 years of age, and the results will be reported in a separate paper. It would be interesting to know the normal range of variations in these arteriosclerotic subjects without any manifested cerebrovascular disease as compared to the normal young males.

Discussion

The medial supraorbital area on each side of the forehead is supplied by the frontal and supraorbital branches of the ophthalmic artery. There are anastomoses between it and the external carotid artery through the terminal branches of the angular and superficial temporal arteries and the internal carotid artery at the level of the supraorbital and frontal arteries. There are also anastomotic branches between the left and right carotid systems. The internal carotid arteries have major communications through the anterior communicating artery at the level of the circle of Willis.

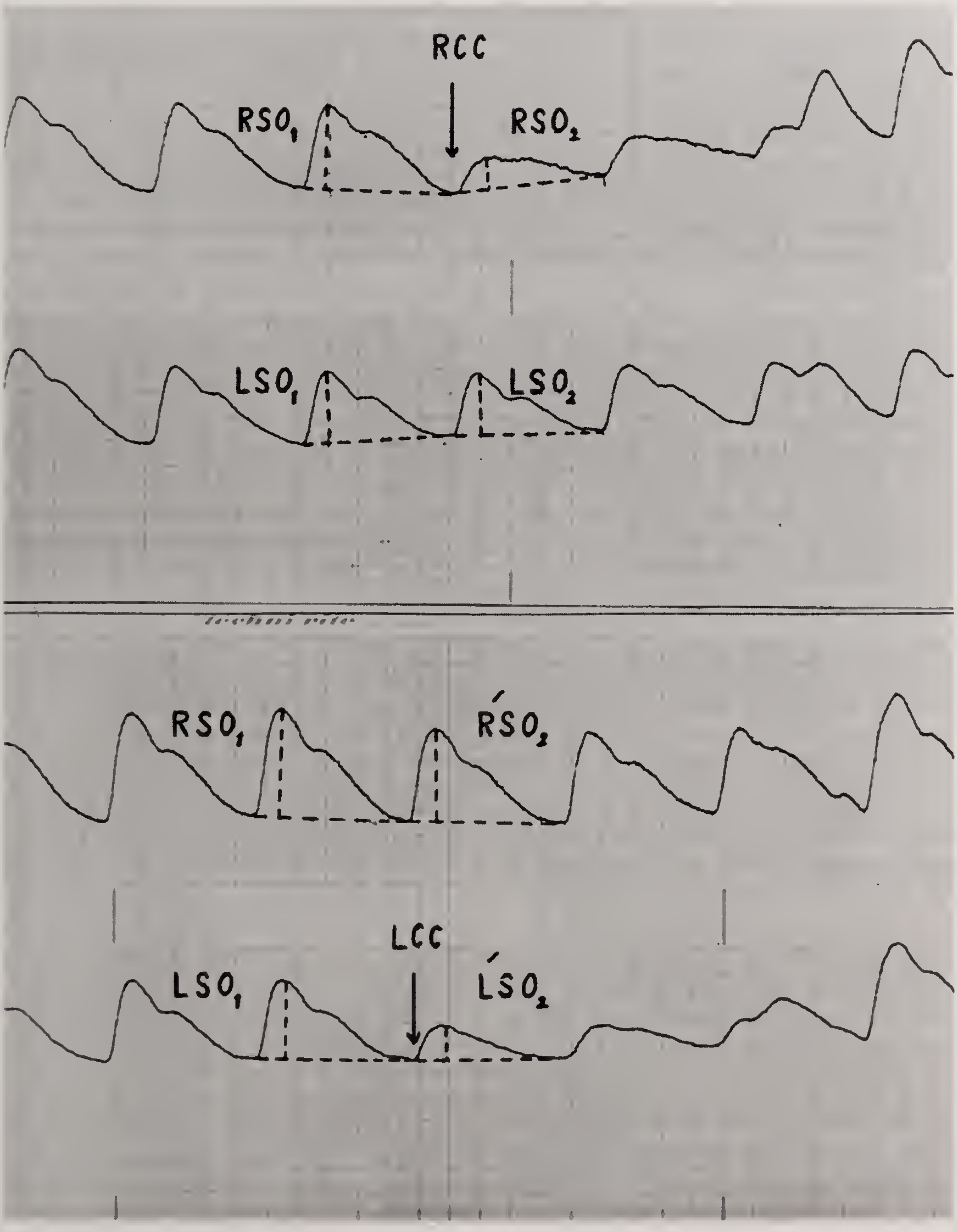

FIG. 3. Measurements of pulse curves amplitude in homolateral and contralateral sides of compression before and after carotid compression.

In normal individuals carotid artery compression diminishes the blood flow through the carotid arterial system, which is manifested by marked reduction or flattening of the pulse curve in the homolateral side on the plethysmographic tracings. This change is observed almost immediately after the compression is applied and springs back to normal as soon as the carotid artery is released. Occasionally the recovery phase of the pulse curve rises above normal levels for 1 or 2 beats following decompression. Under normal conditions there is an inconstant moderate diminution of amplitude in the contralateral side as was noticed in 40 per cent of cases in this study. The cause of this crossover fall is not clear. It may be that because of the sudden unexpected occlusion of one common carotid artery the collateral circulation cannot adjust itself to this sudden change as fast and that contribution of collateral vessels to the contralateral side is then minimized. It is also possible that, because of the sudden pressure drop in the whole carotid system in one side, blood is drained from the contralateral high-pressure system into the homolateral low-pressure side of the carotid artery compression. Decrease in the systemic pressure may also play a part in this phenomenon.

On the basis of this preliminary study on normal young persons and the basic anatomy and physiology of the extra- and intracranial vascular system it can be hypothesized that with photoelectric plethysmography and carotid compression:

1. Homolateral reduction in the pulse-curve amplitude represents the contribution of the internal carotid artery to the supraorbital artery blood flow plus any collateral supply from the external carotid artery. In case of the complete occlusion of the common carotid artery there should not be any homolateral diminution of the amplitude since collaterals have been fully developed, but with occlusion of the internal carotid artery, even if complete, a homolateral fall should be a normal observation (via homolateral external carotid artery).

2. Contralateral decrease in the amplitude of the pulse curve beyond the normal range (0–80 per cent) will be suggestive of diminished flow (stenosis or partial occlusion) in the contralateral common carotid or internal carotid artery. Presumably this is due to the sharp drop of the blood flow in the circle of Willis and supraorbital artery when there is no supply from either carotid artery.

3. After carotid-artery surgery, by compression of the opposite carotid artery, this test could be very helpful in disclosing an arterial occlusion in the early postoperative course. Furthermore, since it can be repeated every day, the test permits accurate study of the evolution of the surgical carotid arterial anastomoses. It can also help in the recognition of various blood supplies after carotid artery occlusion and is one of the best methods for studying the degree of development of the collateral circulation reaching the supraorbital arteries.

Conclusions

Photoelectric plethysmography with carotid compression offers the simplest, quickest, and most innocuous screening procedure for the evaluation of the carotid arterial blood flow among the present available means. It is easily performed by 1 person under any clinical condition in, at most, 10 minutes and does not need the patient's coöperation.

There is no doubt that angiography is the ultimate procedure for detection of the exact site and degree of the vascular lesion in patients who will be subjected to surgery. Carotid angiography is not an entirely safe procedure and cannot be performed in all clinical conditions. Therefore, it would be ideal to have access to a safe, reliable screening procedure for selecting those who should have angiography. We are now attempting to correlate the results of this test with angiography and to document its reliability in a statistically significant number of patients.

Photoelectric plethysmography with carotid artery compression is worth trying:

1. As a screening test for the presence of common and internal carotid artery occlusion in the routine investigation of strokes. Angiography could then be performed in abnormal cases to determine the site and degree of the vascular lesion. This test should always be done before angiography because the carotid artery remains tender to compression for several days after puncture.

2. As one of the very few diagnostic procedures in the early stages of acute stroke when emergency carotid surgery may reverse advancing cerebral ischemia.

3. In the postoperative period to investigate the degree of development of the collateral circulation and surgical carotid arterial anastomoses.

4. In the epidemiology and follow-up of patients with transient ischemic attacks and on the incidence and course of carotid artery stenosis.

I express my appreciation to Dr. William L. Howell for permission to undertake this project, for use of his equipment, and for his great help and advice.

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Primary Hyperlipoproteinemia—A Medical and Surgical Problem

Report of a Case

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In recent years the problem of primary hyperlipoproteinemia has been more clearly elucidated and both clinicians and surgeons are becoming increasingly aware of its clinical implications. The following case report and discussion will illustrate this.

Report of Case

A 37-year-old white woman was first seen by one of us* on April 25, 1960. She had been awakened at 4:30 a.m. on April 23 with a severe knifelike pain in the upper abdomen which throughout the day progressed to involve the entire abdomen without radiation to the back or shoulder. She took aspirin, which she promptly vomited. She summoned her physician† who gave her injections of Demerol® without relief. She was hospitalized that day, and by midnight the pain had localized in the right lower quadrant. At this time her temperature was 104°F, and her abdomen was diffusely tender throughout, with rebound, more marked in the right lower quadrant. The white blood cell count was 15,000 with a marked shift to the left. Serum amylase was within normal limits. Flat and upright X-ray films of the abdomen failed to show evidence of free air or diagnostic bowel pattern.

The patient had been well until 1952 when she had a similar episode of generalized abdominal pain and tenderness unrelieved by Demerol or other narcotics. At that time she was operated upon and told she had a "perforated ulcer." Following this she was placed on a bland diet high in milk and antacids. Prior to this operation she had no symptoms of dyspepsia or ulcer; however, following the operation she began to have occasional episodes of upper and generalized abdominal pain which would usually last for a day or less. On many of these occasions she summoned a physician who gave injections which relieved the pain. At other times the pain was relieved by aspirin. These occurred infrequently, perhaps at intervals as great as several months. Four years prior to admission the patient consulted one of us† who noted that her serum was "milky." She had been seen as an outpatient at the National Institutes of Health for this.

In view of the history and abdominal findings on this admission it was thought that the patient had an acute surgical abdomen, probably a perforated ulcer or a ruptured appendix, and immediate surgery was advised. The abdomen was opened through the previous right paramedian incision. The bowel, which was moderately distended, was coated with a milky fluid resembling pus, and about 6 ounces of a similar material was aspirated from the lesser sac. There was no evidence of a leak from the stomach or duodenum. The pancreas was edematous with scattered areas of fat necrosis. The appendix was small and fibrotic. The abdomen was closed after aspiration of the fluid. The fluid was sent to NIH for analysis and proved to have a very high content of unesterified fatty acids. Recovery was uneventful. A postoperative upper gastrointestinal X-ray series failed to reveal ulceration.

Further investigation of the previous surgical admission revealed that the abdominal findings had been similar at that time. The surgeon had assumed that the patient had perforated and spontaneously sealed her "ulcer."

The patient was admitted to the Metabolic Section of the National Institutes of Health for evaluation in May 1960. It was noted here that the patient had the following blood lipid determinations (normal in parentheses):

Total cholesterol	381	(240) mg. per 100 ml.
Free cholesterol	146	(30 per cent of total)
Phospholipids	462	(250)
Triglycerides	2,530	(100)

In addition, the patient was noted to have a diabetic glucose tolerance curve. She was advised to lose weight and remain on a moderately low-fat diet high in unsaturated fats. On this regimen the bouts of abdominal pain became less frequent and when they occurred were usually related to dietary indiscretion.

In February 1967 she had a further admission to the hospital with acute abdominal pain, diffuse abdominal tenderness, rebound tenderness, and distention. Serum amylase at this time was reported as 578 Somogyi units

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(normal up to 150). The patient was treated with nasogastric suction and was well in 72 hours. She has had no more major episodes of abdominal pain. If they recur we are considering an elective appendectomy in view of the difficulty of differentiating these episodes from acute abdominal catastrophies.

In November 1968 the patient was placed on Norlutate® 2 mg. daily on a 20-day per month cycle. There was prompt reversion of her serum cholesterol and triglyceride levels to normal. She has been maintained on this regime since with maintenance of improvement as well as improved glucose tolerance curves.

The family history is relevant. The mother was a diabetic and died in her late sixties of the complications thereof. The patient is one of a group of 6 children. An older brother, during the time encompassed in this patient's history, has been proved to have documented hyperlipidemia with similar episodes of abdominal pain. The mother, a sister, and a brother have all had thyroid surgery for goiter.

Discussion

It is generally thought that the syndrome herein illustrated was first described by Bürger and Grütz[1] in 1932 under the name "hepatosplenomegalic lipidosis." The first patient with a relative who also had hyperlipemia was described in 1939 as having "idiopathic familial hyperlipemia."[2] After this description many other cases were reported under the name "idiopathic" or "essential hyperlipemia." Other synonyms are idiopathic familial hyperlipemia, retention hyperlipemia, alimentary "hepatogenic" fat retention, familial lipemia, fat-induced hyperlipemia, and familial hyperchylomicronemia.[3, 4, 5] In addition to the characteristic syndrome described, most of these patients were noted to have blood serum that looked creamy or milky.

Fredrickson and associates[6, 7] noted that none of the plasma lipids are sufficiently polar to circulate free in solution. They depend on interaction or "binding" to protein, and the resulting "macromolecules" or "micromicelles" are referred to by the generic term of lipoproteins.

Hyperlipoproteinemia (hyperlipidemia) falls into 2 major subdivisions from the standpoint of differential diagnosis on the basis of etiology.[8] The secondary kind is an expression of altered metabolism due to some other recognizable disease, such as the nephrotic syndrome, hypothyroidism, pancreatitis, diabetes mellitus, etc. One deals with the disease and ignores the syndrome; hyperlipoproteinemia will disappear if one successfully manages the underlying disorder. Primary hyperlipoproteinemia includes all the rest. It is either familial or sporadic. The term 'heritable' is less commonly used than familial but is more accurate. Familial hyperlipoproteinemia obviously need not be inheritable if it is due, for example, to patterns of excess in diet or alcohol intake that have been acquired by close relatives.

In a desire to use more specific terminology, certain durable nouns from the "lipid era" should not be discarded. Hypercholesterolemia and hyperglyceridemia convey exact meaning, as does hyperlipemia (hyperglyceridemia severe enough to cause lactescence in plasma). Two venerable modifiers, 'essential' and 'idiopathic', must be laid to rest. Their use no longer defines specific diseases and merely conceals heterogeneity. A diagnosis of "essential hyperlipemia" should no longer be acceptable to either physician or patient.

Fredrickson and his co-workers[7-11] in a monumental work have separated this hodgepodge of syndromes into 5 clearly defined entities according to clinical manifestations and biochemical assays.

The Type I lipoprotein pattern is characterized by the presence of chylomicrons in high concentration in plasma 14 hours or more after the last meal. The chylomicrons carry dietary glycerides and are particles so large that they scatter light and cause hyperlipemia that is properly called exogenous or fat-induced. It is apparently related to a decrease in the enzyme lipoprotein lipase which results in retarded removal of chylomicrons from plasma. While secondary forms of this type occur in uncontrolled diabetes,[12] pancreatitis,[13, 14] and acute alcoholism,[15] the typical picture appears usually in infancy. The patient looks healthy but has "bouts of colic" and a prominent abdomen. Yellow papules with a reddish base may be present in the skin and oral mucosa. The liver and spleen are enlarged, and white retinal vessels (lipemia retinalis) are seen with the ophthalmoscope. The blood sample resembles "cream-of-tomato soup." Once the lipoprotein pattern is established, the baby's formula is changed to skim milk or other fat-free sources of calories. Within 3 days the hyperlipemia will clear dramatically. The xanthomas will shortly resolve, the liver and spleen will decrease in size, and the attacks of abdominal discomfort will disappear.

Although most of the Type I cases are discovered before the age of 10, some may be adults before the diagnosis is made. When the patient is old enough to describe his abdominal discomfort in details that suggest one of a variety of surgical emergencies, he may, as in our case, undergo 1 or more laparotomies before the nature of his syndrome is appreciated. The origins of the pain are still obscure, and the pain can occur as well in patients with other kinds of severe hyperlipemia. Sometimes it is accompanied by the usual chemical signs of pancreatitis; it has been speculated that this organ is compromised by fat embolism or perhaps local lipolysis, giving rise to irritatingly high free fatty-acid concentrations in the abdomen. Proof is lacking for any mechanism. On other occasions similar pain is not associated with any rise in serum lipase or amylase content. The pain can be restricted to a single organ such as the spleen or liver, which may be exquisitely tender. Because pregnancy may exacerbate hyperlipemia, special care must be taken by these patients during this time.

The treatment of Type I is moderate restriction of dietary fat, usually to 20 to 25 Gm. a day. The degree of saturation of the fatty acids in the diet seems to make no difference in the degree of hyperlipemia. When acute abdominal symptoms develop the patient should be fed parenterally only. Intubation may be necessary to relieve distention and ileus. The so-called "autohyperlipemic" medications have no place in the treatment of Type I disease.

Type II hyperlipoproteinemia is characterized by an increase in beta lipoproteins. It accounts for a great deal of the "hypercholesterolemia" that the physician sees. In this type xanthomas and atheromas are common. The most common characteristic manifestation is tendinous xanthomas located in the Achilles tendons and the extensor tendons of the hands and feet. Tuberous xanthomas on the elbows, knees, and buttocks, and periorbital areas (xanthelasma) occur. A corneal arcus is common.[16] Accelerated arterial disease, especially involving the coronary arteries, is a life-threatening feature. Occlusive peripheral or cerebrovascular disease does not seem to be as common as coronary artery disease in Type II.[17, 18]

The 2 components in dietary treatment of Type II abnormality are limited intake of cholesterol and substitution of polyunsaturated for saturated fats.[19] Substitution of skim milk for whole milk products, severe restriction or even elimination of egg yolks, and reduction of meat intake is one of the most effective dietary regimens. While body weight and expression of familial hyperbetalipoproteinemia have not shown a direct relationship, it is reasonable to urge such patients to remain thin in anticipation of coronary insufficiency. A variety of drugs, including nicotinic acid,[20] d-thyroxine,[21] estrogens,[22] sitosterol, etc. have been tried in reducing hypercholesterolemia with varying effects.

Type III hyperlipoproteinemia is characterized by hypercholesterolemia and hyperglyceridemia. A peculiar feature, which tips off the diagnosis, is lipid deposition in the palms of the hands. As with Type II, xanthomas occur in the usual distribution, but occlusive vascular disease occurs in peripheral vessels, especially the femoral and popliteal vessels, with severe claudication, as frequently as in the coronary vessels.

Management of these patients consists of weight reduction if the patient is overweight and maintenance of ideal weight with a diet high in polyunsaturated fats and as low in cholesterol as is practicable.

The Type IV lipoprotein pattern is the hallmark of endogenous hyperlipemia. It implies that glycerides synthesized in the body, usually in the liver, have been excreted into the plasma at rates exceeding the capacity for removal. The clinical manifestations are those of exogenous hyperlipemia with eruptive xanthomas, lipemia retinalis and foam cells in the bone marrow and other reticuloendothelial tissues. The patients are also subject to the same bouts of abdominal pain with or without chemical signs of peritonitis. Abnormal glucose tolerance curves occur in 90 per cent of the patients. Plasma triglyceride concentrations rise with age and so does the incidence of Type IV. The majority of patients are adults when first detected. Secondary Type IV occurs also in diabetes, pancreatitis, alcoholism, hypothyroidism, gout, Niemann-Pick disease, Gaucher's disease, etc. Women taking progesterone analogues by mouth, alone or in combination with estrogens for contraception or other purposes, frequently have Type IV patterns.[23] The same is true of pregnancy.[24]

The treatment of primary Type IV presently includes weight control, avoidance of excessive dietary carbohydrate (which induces excessive rises in plasma glyceride level[25]), and hypolipemic agents, in that order. Heparin injections may temporarily reduce Type IV hyperlipoproteinemia,[26] but long-term use is not practical.

There are some patients on a regular diet who have chylomicrons and increased amounts of prebeta lipoproteins (as in our patient herein described). The Type V pattern has been reserved to designate this combination of endogenous and exogenous hyperlipemia. There is some question as to its specificity, since it may be a stage of Type IV produced by a sudden imposition of a heavy load of dietary fat on clearing mechanisms intolerably burdened by endogenous glycerides.

The Type V patients are equally male and female. Symptoms usually appear in the second or third decade (as opposed to Type I in which symptoms appear in infancy). The commonest complaint is recurrent abdominal pain which usually leads to exploratory surgery which provides no specific diagnosis. Occasional milky fluid is present within the peritoneal cavity. Xanthomas in the previously described distribution occur, as does lipemia retinalis. The patients are often obese with a family history of both diabetes and obesity. Pancreatic lipase and amylase may or may not be elevated. Glucose tolerance is almost invariably abnormal.

The fall in hyperlipemia with a fat-free diet is usually quick, but not as rapid as in Type I. Type V hyperlipemia is much more affected by negative caloric balance. One must be very cautious in refeeding fat after the patient has been on a fat-free high-carbohydrate diet. Marked chylomicronemia and severe abdominal pain may develop in 1 day.

Recently, treatment with Norlutate on a 20-day per month cycle has been successful in lowering serum cholesterol and triglyceride levels to near normal. It is also being used in men, but the period of therapy in these men has not been long enough to evaluate results.[27]

Summary and Conclusions

The clinical and biochemical entity of hyperlipoproteinemia has been described and its division into 5 types, as designated by Fredrickson and his associates, has been elucidated. An illustrative case report of the Type V syndrome has been added to the literature.

Type I (exogenous hyperlipemia) begins in infancy, is accompanied by bouts of colic, xanthomata, hepatosplenomegaly, and lipemia retinalis.

In Type II (hypercholesterolemia) there are tendinous xanthomas and occlusive vascular disease, particularly involving the coronary arteries.

Type III (hypercholesterolemia and hyperglyceridemia) has the features of Type II with the addition of lipid deposition in the palms of the hands and the occurrence of peripheral vascular occlusive disease involving the extremities as well.

Type IV (endogenous hyperlipemia) shows xanthomas, lipemia retinalis, and recurring bouts of abdominal pain. The patients are usually adult when first seen.

Type V (combination of exogenous and endogenous hyperlipemia) presents a similar chemical picture to Type IV, but the attacks of "abdominal crises" may be somewhat more prominent.

The treatment of the various entities has been described. The surgeon becomes involved in Types I, IV and V because of the occurrence of obscure abdominal pain of recurrent nature and/or the sudden onset of severe abdominal pain with a clinical picture that simulates in every respect an acute abdominal catastrophe, with or without accompanying elevations of pancreatic lipase and amylase.

It behooves the internist and the surgeon to keep these syndromes in mind when confronted with a patient with obscure abdominal pain. The patient with "cream-of-tomato soup" serum should be clinically evaluated and the proper dietary therapy instituted even if the patient is currently asymptomatic. The patient who continues to have bouts of severe abdominal pain and signs of peritonitis despite adequate therapy or because of failure to maintain his proper diet may be well advised to have an elective appendectomy because of the doubts and the soul-searching required of both internist and surgeon while waiting for the signs of peritonitis to subside on the usual treatment of nasogastric suction and parenteral feeding.

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(*Continued on page 148*)

Vaginal Acid Phosphatase

IRA D. GODWIN, M.D.,* AND GEORG K. SEITZ, M.D.†

High levels of acid phosphatase in the vaginal 'pool' have been utilized for a number of years to indicate the presence of semen. At least 1 author[1] considers that the "Estimation of prostatic acid phosphatase in the vaginal pool is the most sensitive and reliable method for including or excluding the presence of prostatic secretions (semen) in the vagina." Others[2, 3, 4] consider the identification of spermatozoa as a better index of sexual intercourse.

For 3 years we have studied specimens submitted in cases of alleged rape by attempting to identify sperm in material placed on a slide and by acid phosphatase determination in material on a swab collected at the same time. These materials were locked in the "Rape Box"[5] until examination. We were puzzled when we could not find spermatozoa on the slides from some patients but were able to detect low levels of acid phosphatase in material from the swabs. The problem of meaningful interpretation was complicated by the fact that we have not been able to find reported values with our method for acid phosphatase levels in the vaginal pool either before or after sexual intercourse. Therefore, it was decided to determine the normal level of acid phosphatase in the vaginal pool and then to attempt to decide whether search for spermatozoa or performance of acid phosphatase levels was more practical and accurate in determining the presence of semen.

Procedure

Inquiry was made as to the date and exact time of the last sexual intercourse. Consideration was given to the use of contraceptive devices and postcoital douches. When postcoital douches had been performed, these persons were excluded from the study.

Most patients were seen for routine semiannual pelvic examinations and cytology studies. A few patients were in the process of being investigated for infertility. These were instructed to have intercourse at a certain time and to report to the office for examination.

As much vaginal secretion as possible was obtained from the upper vagina by means of 2 dry cotton swabs. Two smears were prepared from one of the swabs for Papanicolaou staining. The second swab was placed in a dry test tube for the determination of acid phosphatase. The smears and swabs were delivered to the laboratory within 2 hours.

The dry slides were stained by our usual cytology stain and search for the smear carried out at high dry magnification.

The dry swab was placed in 1.5 ml. of saline for 30 minutes and agitated periodically. Acid phosphatase level was determined on this fluid by the method of Babson-Reed (Phosphatabs by Warner-Chilcott).

Results

The acid phosphatase value was found to be as high as 85 units (table 1) in the absence of recent sexual intercourse. The higher values were found in women who were pregnant. No value above 65 units was found in nonpregnant women who had not had recent sexual intercourse.

TABLE 1: Normal Vaginal Pool Acid Phosphatase Values

Patient	Age	Time Since Sexual Intercourse	Acid Phosphatase Units	Comments
S. S.	30	1½ days	3	
M. C.	21	1½ days	10	
T. H.	42	2 days	4	
P. D.	26	3 days	19	Ortho-Novum®
M. S.	28	3 days	22	
K. C.	19	3 days	31	Enovid®
K. S.	32	3 days	31	Norlestrin®
P. A.	30	4 days	32	
B. D.	28	4 days	58	Ortho-Novum
C. F.	31	5 days	27	
E. W.	27	5 days	52	
M. H.	30	7 days	1	Ovulen®
J. S.	22	7 days	3	Pregnant
G. D.	37	14 days	5	Provera®
S. K.	27	14 days	16	
J. A.	29	14 days	64	
J. R.	26	16 days	3	Diaphragm
D. P.	31	6 weeks	54	Pregnant
B. C.	25	4 months	85	Pregnant

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Usually, goodly numbers of spermatozoa were present and the acid phosphatase was elevated to greater than 300 units when sexual intercourse had taken place within 12 hours (table 2). In one instance sperm could not be found although the acid phosphatase was 905 units; 11 hours had elapsed since intercourse.

Table 2: Vaginal Pool Acid Phosphatase and Sperm Levels after Sexual Intercourse

Patient	Age	Hours Since Sexual Intercourse	Acid Phosphatase Units	No. Sperm*	Comments
C. B.	29	3	4,160	10–50	
J. G.	22	3	2,000	1–6	
R. F.	23	4½	1,160	0–2†	
P. H.	29	9½	16	0–2	C-Quens®
M. R.	22	10	250	3–25	
T. M.	39	11	905	None	
V. F.	28	12	500	0–8	
M. S.	21	12	440	6–8	
A. W.	25	12	310	2–40	
J. B.	24	12	14	0–1	
J. M.	17	13	250	0–4	Norlestrin
W. S.	40	14	1,340	2–12	
L. V.	26	14	340	1–4	
R. Y.	22	15	12	0–2	
M. Z.	27	22	50	0–1	
R. J.	36	29	260	0–2	
J. G.	18	36	1,575	1–4	
D. C.	20	36	670	1–7	
B. L.	24	36	58	0–1	
P. S.	30	36	24	0–1	
L. A.	31	36	14	0–2	
R. H.	36	36	10	0–1	
J. P.	24	39	100	0–1	Ovulen
B. R.	23	168 (7 days)	2	0–3	Enovid

* Millions per ml. per high-power field.

† Husband has 11,000,000/ml. sperm count (normal 60,000,000 or more).

In 9 instances the acid phosphatase was below 85 units although a few sperm could be found on the smears.

No attempt was made to determine mobility or viability. Sperm could generally not be found after 48 hours in our study, but in one case a few were identified after 7 days. Observers have generally indicated that the maximum survival time of spermatozoa is 2 to 4 days.[2, 5, 6] Pollak's review[7] included a case in which sperm were identified 17 days after sexual intercourse.

Summary

Normal values for acid phosphatase in vaginal secretions were determined in 19 women; spermatozoa could not be identified in the same secretions. The highest value in a nonpregnant patient was 64 units. One of the 3 pregnant patients had a higher value—85 units.

An additional group of 24 patients were considered to have positive values for the presence of semen in the vaginal pool either by the identification of spermatozoa, high levels of acid phosphatase, or both. In only 1 instance was the acid phosphatase value greater than 85 units in the absence of sperm identification. However, sperm were identified in 9 of these patients who had acid phosphatase values below 85 units.

The acid phosphatase test is not as accurate in detecting the presence of semen in the vaginal pool as is a search for spermatozoa. However, it is a good confirmatory test and may be especially helpful if the male has no sperm or a low sperm count.

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Aspiration of Breast Cysts—Method and Results

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AND HARRY ZEHNER, JR., M.D.*

The patient was an attractive woman in her late forties, but that day her makeup was not skillfully applied, her eyes were red, she had not slept. The day before, for the first time, she had noticed a painful lump in the upper outer portion of her left breast. Visions of a rapidly growing tumor and memories of friends and relatives who had died of cancer of the breast kept her up all night. Now she was consulting her physician.

Her menstrual periods had been heavy all her life, more so recently. She had frequently noticed mild pain in her breasts prior to her period, but until now she had never noticed a lump associated with her pain.

Biting her lip in resignation, she removed her blouse and bra, sitting tensely in the examining chair. The breasts looked normal. Her physician examined the unaffected side and noted a coarse, granular condition. The tail-like extension of the breast into the lower armpit was also granular and distinct from the nearby fatty tissue.

"It's the other one," she said, a bit reassured by the gentleness of the examination. "I know," her physician replied. "I just wanted to check the normal texture of your breast." His fingers moved to the left side. She winced involuntarily as he noted a hard, very round area in the upper outer corner of the breast. Despite her obvious discomfort he tested the mass again between his fingers and recognized the slight resiliency of a fluid-filled sac. There were no other lumps in either her breast or armpit.

This patient could be managed in several ways. One school of surgeons would insist that she enter the hospital immediately and undergo open breast biopsy. A second (and hopefully larger) group would elect to aspirate the breast cyst, immediately relieving the patient's mind and avoiding hospital admission. Such a course is obviously kind over the short term, but is it wise in the long run? Certainly the ultimate fate of patients so treated is deserving of critical study.

Three important questions come to mind. Will a policy of aspirating breast cysts result in missed carcinomas? Is there a chance that aspirated cysts left in situ will become malignant? Does the patient with symptomatic breast cysts run a greater risk of carcinoma? To investigate these problems we have recently conducted a review of the records of over 2,000 patients seen with the chief complaint of a palpable breast mass. This represents all private patients seen with this complaint from 1935 to 1965.

All patients who have a mass in the breast are subjected to a history and physical examination. At this time a decision must be made. Should the patient be advised to have immediate breast biopsy or should an attempt be made to aspirate the mass with the hope that a unilocular cyst will be discovered and operation avoided? The decision is influenced by a number of factors. Young patients with the slowly growing, highly mobile, nontender mass characteristic of fibroadenoma are advised to have operation, since aspiration cannot succeed. We also avoid aspiration in elderly patients with slowly growing, irregular, hard tumors. Aspiration is, of course, contraindicated in the presence of palpable axillary lymph nodes, fixation to muscle, skin retraction or edema or skin ulceration. On the other hand, menstruating patients in their thirties and forties who suddenly develop a painful, globular mass certainly deserve an attempt at aspiration before being subjected to the pain, time loss, expense and mental trauma of excisional biopsy. Transillumination of breast masses occasionally reveals obvious cysts. An occasional patient will exhibit such fear at the idea of local aspiration that we resort to open biopsy.

Method

When a careful examination suggests that the presenting breast lump may be a cyst, aspiration is attempted. One per cent procaine is injected intradermally over the lump with a no. 26 needle. A larger needle (no. 18) on a syringe is then inserted into the lump and aspiration attempted. The fluid obtained is usually cloudy and quite often brownish. Patients experience very little

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discomfort. A drawing of the breast with a very accurate depiction of the location, character and amount of fluid is always made.

If the fluid is not bloody and if the lump completely disappears, the aspiration is successful. The patient returns for a follow-up visit in 2 weeks and is encouraged to make a follow-up visit every 3 months. On the other hand, if aspiration yields no fluid, if bloody fluid is obtained, or if the mass fails to disappear completely, immediate operation is advised.

Figure 1 is a flow chart showing alternate pathways taken by patients with this scheme of management.

A review of the records of over 1,500 aspirations reveals only 3 minor complications in the entire series: 1 abscess, 1 hematoma, and 1 extensive ecchymosis. All were handled conservatively with success.

Results

No aspiration. A total of 2,295 women were seen with the initial complaint of a mass in the breast. Because of age, history, or the feel of the lesion, operation was advised in 1,501 cases without additional office procedure. This group of patients is heterogeneous. It contains many of the young with solid fibroadenomas (24 per cent) and the old with their obvious carcinomas (49 per cent). The remaining 25 per cent represent patients with fibrocystic disease, its microscopic variants, and other benign states in whom biopsy without other procedure was thought to represent the wisest course (table 1).

TABLE 1: Fate of 2,294 Patients Initially Found to Have a Breast Mass
1935–1965

	No.	*Per cent*
GROUP I: No attempt at aspiration; immediate open biopsy		
Fibroadenoma	346	24
Fibrocystic disease	277	18
Other benign lesions	149	10
Carcinoma	729	48
Total Group I	1,501	100
GROUP II: Aspiration not successful—immediate open biopsy		
Fibroadenoma	120	45
Fibrocystic disease	78	30
Other benign lesions	15	5
Carcinoma	54	20
Total Group II	267	100
Group III: Aspirated successfully—36 months' average follow-up		
Did not develop additional cysts	254	49
Developed additional cysts	260	49
Developed carcinoma at site of aspirated cyst	1	0.2
Developed carcinoma at different site	11	2
Total Group III	526	100
TOTAL ALL GROUPS	2,294	100

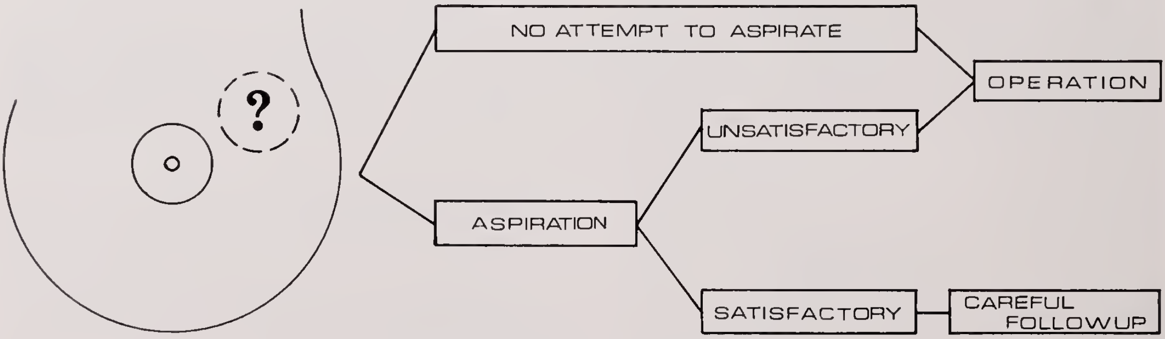

FIG. 1. Scheme of treatment.

Unsatisfactory aspiration. In 267 attempts at aspiration an unsatisfactory result was obtained; that is, either the mass did not go away completely, no fluid was obtained, or the fluid was bloody. All of these patients underwent operation (table 1).

Thus, on clinical grounds alone 729 carcinomas were sent directly to operation while only 54 (7 per cent) were needled. These 54 patients were operated on an average of 1 week after the first visit and were followed for an average of 6 years, with a survival rate of 68 per cent. Because of the small numbers this statistic is not meaningful, but it would seem to imply that needling of the carcinoma does not create much change in the survival that one would otherwise expect.

Bloody fluid. Bloody fluid was obtained in 15 cases. Of these, 9 were cystic disease, 1 a hematoma, and 4 carcinomas. One patient refused operation and was followed 5 years with no further evidence of disease. The 4 cases which proved to be carcinomas are reported below:

1. E. O., a 42-year-old, actively menstruating white woman, had undergone excisions of breast tissue bilaterally elsewhere for fibrocystic disease. Aspiration yielded bloody fluid, and at operation 1 week later frozen section reported "benign cyst with papilloma." The pathologist, however, on permanent section decided that the papilloma was malignant. Radical mastectomy was performed immediately.

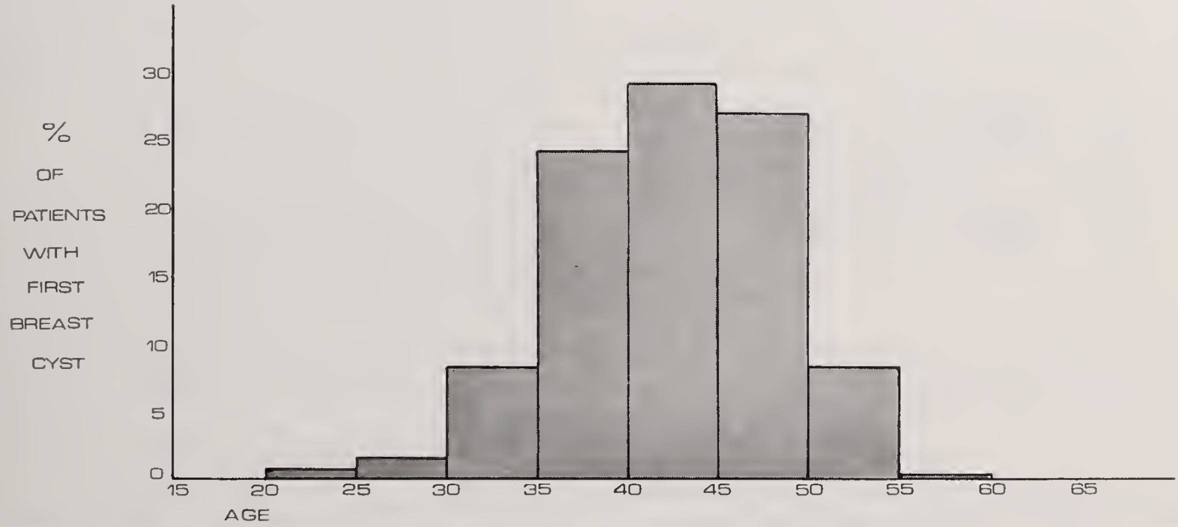

FIG. 2. Histogram showing per cent of total patients in different age groups undergoing first successful aspiration.

2. L. H., a 56-year-old, surgically menopausal white woman, gave a history of bloody discharge from the left nipple. Aspiration of a large mass yielded a few c.c. of blood, and the mass remained. Radical mastectomy was performed 1 week later and showed intraductal cystadenocarcinoma with axillary nodes involved.

3. A. M., a 66-year-old, postmenopausal white woman, had a lump in the upper inner quadrant of the left breast which yielded 2 c.c. of clear fluid on aspiration. Seven weeks later the lump was still present and 2 c.c. of bloody fluid was aspirated. Radical mastectomy was performed and the pathologic diagnosis was intracystic papilloma with carcinomatous changes and no nodes involved.

4. R. C., a 45-year-old, surgical menopausal white woman, underwent aspiration of a supposed breast cyst. Bloody fluid was obtained, and the mass did not completely resolve. At open biopsy a cystic structure lined with carcinoma was noted and radical mastectomy was done. No nodes were involved.

Reappearance of same lump. Reappearance of the same lump after successful aspiration is an indication for surgery. The case of the patient in whom carcinoma was found is reported below:

E. B., a 33-year-old, actively menstruating white woman, was seen with a lump in the upper outer quadrant of the left breast. This area was aspirated 4 times at weekly intervals, each time yielding 4 c.c. of clear fluid. Surgery was advised. At operation 1 month later, 2 separate carcinomas of the same breast were discovered.

Successful aspiration. In 526 patients the aspiration of the cyst met with all criteria of success—the lump disappeared, the fluid was light brown or clear, and there was no recurrence of the lump on subsequent visits. Thirty-three of these patients had had a previous diagnosis of cystic disease made at a previous operation.

The age of patients with satisfactory aspirations was remarkably preponderant in the forties and early fifties (figure 2). Eighty per cent of the patients were having normal menses. Almost all of the remainder either had a surgical menopause or a very recent normal menopause.

Location and amount. By far the largest number of cysts, 63 per cent, were found in the upper outer quadrant of the breast (figure 3). Unfortunately, this is also the location of the largest percentage of malignant tumors of the breasts as well.

The total amount aspirated from the cyst on first visit was quite variable. Five c.c. or less was obtained in 57 per cent of cases, less than 10 c.c. in 75 per cent. A small number of cysts were quite large, the largest in this series being 125 c.c.

Follow-up. The group of patients undergoing successful aspiration was followed for as long as they would come for examination. This period varied; 50 patients did not even keep return appointments while several have been examined each year for over 20 years. Although this is less than ideal from the standpoint of statistics and experimental design, it represents the best that can be achieved in a highly mobile population such as Washington, D. C. The mean follow-up period was over 3 years.

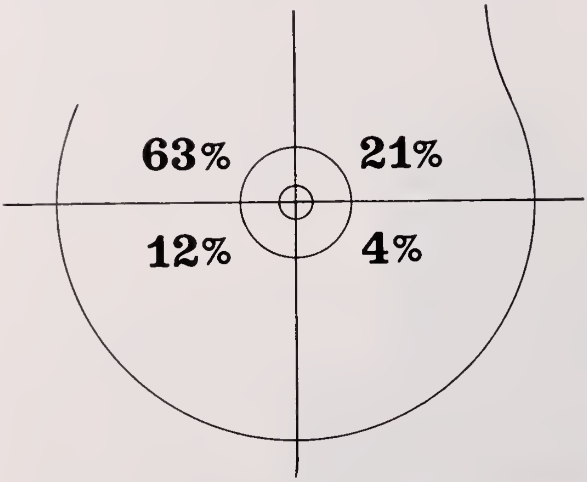

FIG. 3. Location of successfully aspirated breast cysts (right and left sides combined).

Development of additional cysts. The population selected by the initial successful aspiration had a very high risk of developing additional cysts. Of 526 patients with a successfully aspirated breast cyst, 49 per cent returned with additional breast masses. The total number of such "secondary" cysts was over 1,000. When we consider the number of patients lost to follow-up we must conclude that the presence of a single successfully aspirated cyst predisposes to a remarkable degree of additional difficulty. One patient has had 76 successful aspirations to date. Our policy of aspirating cysts has resulted in a saving of literally thousands of days of hospitalization and considerable anesthetic risk for this group of patients.

Risk of malignancy. The 526 patients who underwent successful aspiration were followed for an average of 3 years. Twelve cases of breast carcinoma were encountered in the patients so followed, a crude attack rate of 2 per cent. All of these cases are summarized in table 2.

Subsequent malignancy could develop by 3 mechanisms:

1. The "successfully" aspirated cyst actually contained an undetected malignancy at the time of aspiration which then developed and became clinically obvious.
2. The "successfully" aspirated cyst remained collapsed and dormant but ultimately became malignant.
3. Women with symptomatic fibrocystic disease are thought by some to have an increased incidence of carcinoma of the breast. If this is true, women followed after successful aspiration should have a higher risk of de novo breast carcinoma than an asymptomatic control population.

The missed carcinoma theory. Two principal dimensions, time and space, force us to reject the

TABLE 2: Cases of Carcinoma Developing in Patients Following Aspiration of Breast Cysts

Patient	Menstrual Status	Age When First Seen	Age at Diagnosis of Carcinoma	Interval	Cyst in Same Location as Carcinoma	No. Ipsilateral Cysts	No. Contralateral Cysts	Axillary Nodes†	Status
P. P.*	Active	45	47	2	Yes	2	0	0/10	Living and well
R. B.	Active	42	45	3	No	0	1	"Extensive"	"Very sick" 1 year; presumed dead
M. W.-1	Active	39	44	5	No	0	1	0/7	Died, 3 years
G. P.	Active	49	55	6	No	0	1	0/9	Living and well
D. S.	Active	38	53	15	No	0	2	14/14	Living and well—2 yrs.
B. M.	Active	30	41	11	No	1	0	0/7	Living and well
E. K.	4 months—menopause	52	54	2	No	1	0	"Positive"	Died, 1 year
B. G.	Active	42	48	6	No	2	5	0/?	Living and well
J. W.	Active	36	53	16	No	4	9	0/27	Died, 1½ years
D. M.	Active	35	47	12	No	1	3	0/15	Living and well
M. W.-2	Active	45	52	7	No	7	5	1/6	Living and well
M. J.	Hysterectomy	53	59	6	No	1	1	7/7	Died, 3 years

*Case reported in detail in text.

†Number positive out of number examined.

"missed carcinoma" hypothesis. The long interval between the initial cyst and subsequent carcinoma (5.5 years on the average) makes it most unlikely that carcinoma was present in the initial lesion. Furthermore, we have carefully examined the diagrams in the charts of the patients in table 2. In 4 cases there was only 1 cyst aspirated in the opposite breast. In 2 cases a single cyst of the ipsilateral breast was located in a different quadrant. In 5 cases of multiple aspirations over a period of years no single aspiration was in the same location as the subsequent carcinoma. In only 1 case the carcinoma developed in the same area where a cyst was aspirated 6 months before. Because of its importance this case is reported in detail.

P. P., a white housewife, was first seen with a chief complaint of a mass in the breast at the age of 33. Her menstrual periods were normal. There was a small bean-sized mass in the right breast. Aspiration of the breast did not produce fluid. At operation a fibroadenoma was removed. Four months later a biopsy of the upper outer quadrant of the left breast was done. Diagnosis of fibrocystic disease was made.

Eleven years later the patient developed a globular mass 2 cm. in diameter in the left upper quadrant of the breast. Seven c.c. of dark fluid was aspirated. The lump was not present when examined 3 weeks later, and cytologic study of the aspirated fluid was normal. Six months later 8 c.c. of dark fluid was aspirated from a point lateral to the left areola. Two weeks later no mass was present. Six months later the patient was again examined. A small nodule in the right breast was negative on aspiration. A small nodule, less than 1 cm. in diameter, was noted at the site of the "successful" aspiration 6 months previously. At operation 2 days later, the right breast was found to contain fibrocystic disease, but the small nodule on the left (0.5 cm. in diameter) proved to be carcinoma.

A modified radical mastectomy was done. No lymph nodes were involved. The patient is living and well 5 years later.

This single case is the only one in the entire series which fits the hypothesis of a missed carcinoma due to a policy of breast cyst aspiration, a failure rate of 0.2 per cent. This very low rate must compare favorably with the rate of failure to find a small carcinoma at open biopsy.

The malignant potential theory. Our data also enable us to reject the second hypothesis, that the retained aspirated cyst has malignant potential, for we see that the incidence of carcinoma in the unaspirated breast (4 cases) is almost identical with the number of cases (3) developing in breasts with ipsilateral involvement.

Increased incidence theory. The third hypothesis, that there is an increased risk of malignancy in patients with symptomatic cystic disease of the breast, is impossible to prove or disprove with our data. The total incidence of carcinoma, 2 per cent,in an average follow-up of only 3 years in patients with an average age of 42 seems very high, but we know of no adequate control population of similar age.

Note should be taken of the fact that an average of 5½ years elapsed from the time the first cyst was aspirated until carcinoma was found, this period being longer than the average period of follow-up. The possibility of additional carcinomas in the cohorts of this group lost to follow-up is a sobering one. Despite the difficulties of statistical proof, we think that particular attention must be paid to the patient with symptomatic fibrocystic disease, because the gross rate of tumor development seems unusually high.

Her physician explained what he was about to do. There was an instant of burning pain as he injected the local anesthetic. She closed her eyes expecting further pain, but there was none.

"That's all. You can open your eyes. The lump's all gone."

She could see a fluid-like dirty dishwater in the syringe he held in his hand.

"It's all gone," he said. "Feel for yourself."

And it was all gone.

"You mean I won't have to have an operation?"

"No, I don't think you will, but I do want to examine your breasts again in 2 weeks."

Tears of a different sort were filling her eyes.

Conclusion

After evaluating the clinical course of over 500 women, followed for an average of 3 years, we conclude that breast-cyst aspiration is a safe and effective method of treatment. If certain rules and precautions are followed there is very little hazard of missing the diagnosis of carcinoma of the breast. The aspirated cyst does not have increased malignant potential, although patients with symptomatic breast cysts may have a larger than normal risk of developing carcinomas of their breast.

Treatment of Shock Following Myocardial Infarction*

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Although newer refinements in patient-monitoring and management have reduced significantly the mortality from acute myocardial infarction, the occurrence of shock still carries a grave prognosis. Once shock develops the survival of the patient is entirely dependent on the perception, attentiveness and judgment of his physician.

Shock is characterized by a critical reduction in tissue perfusion. Inadequacy of blood flow impairs organ function and disrupts the integrity of normal metabolic pathways. If shock is not promptly corrected, the flow deficiency leads to organ damage, metabolic acidosis, and a vicious cycle resulting in progressive circulatory deterioration and death. The sooner the syndrome can be recognized the more likely can therapy be effective. The need for prompt recognition of shock must not, however, be satisfied at the expense of "overdiagnosis." It is in this initial evaluation that the physician's perceptiveness is critical. He must be able to recognize the difference between the mildy hypotensive patient who is adequately perfusing his tissues (and needs no immediate treatment) and the patient who is in the incipient stages of shock and requires prompt therapy to restore peripheral blood flow.

In considering the diagnosis of shock, attention should be given to the following signs:

1. **Skin temperature.** Warm skin indicates adequate cutaneous blood flow and usually a fairly well maintained cardiac output. Cool, clammy skin indicates sympathoadrenal discharge, a sign of reflex vasoconstriction in response to a fall in cardiac output.

2. **Peripheral pulses.** Thready or absent brachial and radial pulses indicate either severe hypotension or more often intense vasoconstriction. In either case urgent treatment is indicated. Femoral-artery pulsation will be very weak if the patient is hypotensive, but the pulsations are bounding in the presence of peripheral vasoconstriction.

3. **Auscultatory blood pressure.** This is not a reliable guide to intra-arterial pressure in shock. A low cuff-pressure has the same significance as weak upper-extremity pulses. However, an absent auscultatory pressure usually indicates inadequate blood flow and the need for treatment.

4. **Mentation.** If the patient is alert and responsive, cerebral blood flow is probably adequate. Agitation, confusion or somnolence are signs of deficient cerebral blood flow and usually are associated with a fall in arterial pressure.

5. **Urine output.** Urine flow less than 20 ml./hour with a low urine sodium concentration is evidence of inadequate renal blood flow which, if not corrected, can lead to tubular necrosis.

6. **Cardiac function.** Persistent or recurrent chest pain or arrhythmias in the presence of other signs of hypotension may be accepted as presumptive evidence of functional impairment of coronary blood flow.

7. **Acidosis.** Low arterial blood pH and elevated blood lactate mean reduced tissue oxygenation. Arterial blood gas and pH studies are invaluable in the management of patients in shock.

The presence of 1 or more of the above signs of inadequate tissue blood flow in a patient with an acute myocardial infarction is presumptive evidence of shock. Mild hypotension in the absence of any of these signs should not be diagnosed or treated as "shock."

When the diagnosis of shock has been made, several questions regarding the hemodynamic status of the patient should be answered before definitive treatment can be instituted:

1. **Is the patient severely hypotensive?** Hypotension is an immediate threat to life because of the associated impairment in cerebral and coronary blood flow. Since the cuff pressure may be low even though arterial pressure is normal, the strength of femoral arterial pulsations often is a more reliable guide to blood pressure. In some

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* Submitted to the Medical Annals by the Washington Heart Association.

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patients direct recording of arterial pressure may be necessary.

2. Is blood volume adequate? Some patients become hypovolemic in the hours following an acute myocardial infarction, and the reduction in plasma volume may then become an important factor in the genesis of shock. The central venous pressure (CVP) is a vital guide to the adequacy of circulating volume and should be monitored in all patients with shock. This can be accomplished by threading a catheter through a needle in the brachial, femoral or subclavian vein and advancing it into the thorax. A low CVP (less than 6 cm. H_2O with the zero level at the mid-chest) is an indication for a trial of volume expansion. In myocardial infarction the left ventricle often is in failure while CVP is normal. Therefore, volume expansion should be carried out cautiously. A rise in CVP of more than 2 cm. H_2O during infusion of dextran, saline, or other fluid indicates that volume has been adequately restored. If shock is not corrected by volume expansion the presence of significant left ventricular failure can be assumed.

3. Is cardiac function severely impaired? If peripheral blood flow is markedly reduced and the CVP is high, myocardial failure is obviously an important factor in the shock. Heart rate is not a very useful index of cardiac function. Indicator dilution cardiac output data are of value in the evaluation of myocardial function in selected cases.

4. What is the status of the peripheral vessels? Is there evidence of intense sympathetic discharge? This usually is manifested by cutaneous vasoconstriction and indicates renal vasoconstriction as well. In the early stages of shock peripheral constriction may support fairly normal arterial pressure despite progressive tissue hypoperfusion and lactic acidosis.

The purpose of therapy in shock is to restore adequate organ perfusion. Effective therapy must be based not only on an understanding of the physiologic disturbance but also on a thorough understanding of the pharmacologic action of the useful drugs.

The following drugs may be valuable in certain patients with cardiogenic shock:

1. Isoproterenol. This is a catecholamine with pure beta adrenergic activity; that is, it stimulates the heart and dilates peripheral vessels. It is probably the agent of choice when impairment of cardiac function has led to severe reduction in cardiac output, especially when reflex vasoconstriction is present. Isoproterenol, 1 or 2 mg., should be diluted in 500 ml. of 5 per cent dextrose in water and the rate of infusion gradually increased until the signs of shock are corrected or cardiac rhythm disturbance limits further administration. In some cases the concentration of isoproterenol must be increased as much as 2 mg./100 ml. to obtain a satisfactory effect. Lidocaine may be effective in controlling ventricular irritability during isoproterenol infusion. In some hypotensive patients isoproterenol will not significantly increase arterial pressure, and cerebral and coronary perfusion are not improved. In this situation a vasoconstrictor-inotropic agent may be necessary.

2. Levarterenol (norepinephrine) or metaraminol. These drugs have an alpha adrenergic effect (vasoconstrictor) on peripheral vessels combined with myocardial stimulating properties. Because these drugs may reduce renal and splanchnic blood flow they should be used only when isoproterenol is ineffective. The infusion rate should be the smallest amount necessary to increase systolic arterial pressure to over 100 mm. Hg.

3. Digitalis. The cardiac glycosides have inotropic effects less potent than the catecholamines. They also have vasoconstrictive properties when used intravenously. It is probably best to treat cardiogenic shock acutely with the adrenergic inotropic drugs above and to administer digitalis orally for its more sustained effect.

4. Atropine. If shock is associated with sinus bradycardia, 1 mg. of atropine intravenously may be effective in restoring heart rate and blood flow. Drugs, such as atropine and isoproterenol, which result in an increase in atrial rate, must be used cautiously in the presence of atrioventricular block. Under these circumstances, an increase in atrial rate may result in a decrease in ventricular rate.

5. Furosemide (Lasix®). This potent diuretic can help establish urine output in the oliguric patient. After shock has been treated with the vasoactive compounds above, a diuretic response to intravenous infusion of 200 mg. of furosemide indicates that renal perfusion is adequate. If oliguria persists, however, more aggressive attempts to improve blood flow are necessary.

6. Sodium bicarbonate. If the arterial pH is less than 7.35, sodium bicarbonate should be administered in amounts adequate to restore pH to above that level. Treatment should be initiated with 40 to 100 mEq. sodium bicarbonate and further alkali therapy based on arterial blood pH measurements.

(Continued on page 186)

Clinicopathologic Conference

Anasarca and Shortness of Breath in a 43-year-old White Woman

CHANDLER SMITH, M.D., EDITOR*

THE FOLLOWING CASE REPORT was presented for discussion at the biweekly Clinicopathologic Conference held at The George Washington University Hospital, January 7, 1969.

The patient was a white woman, 43 years old, who was admitted to the hospital because of subcutaneous edema and shortness of breath. Her illness began 9 months previously when she noted swelling of the left leg. This subsided but recurred several times during the next 3 months. The swelling then became generalized, and a weight gain of 25 pounds took place over a 3-week period. Oliguria accompanied this weight gain. Hospitalization elsewhere disclosed proteinuria and hypoproteinemia. The patient was treated with a thyroid medication and a low-sodium diet. The edema gradually subsided and she improved over the following 4 months. Diffuse subcutaneous edema then recurred, and 1 month before entering the hospital dyspnea and swelling of the abdomen were noted. The latter became pronounced, and during the past 3 days respiratory distress was severe.

The mother died of uterine cancer at the age of 46, the father was 70 and diabetic, and 1 of 4 sisters had renal disease at the age of 20 that was manifested by edema and convulsions. Unilateral nephrectomy was curative. All siblings were alive and well.

The patient had had pulmonary tuberculosis from 17 to 23 years of age. This recurred at the age of 35 and required hospitalization for a period of 18 months. Since then sputum cultures and chest X-ray films had given no evidence of active disease. The patient also had hay fever and severe asthma as a child, and this had become worse at the age of 37. Tests had revealed pronounced sensitivity to feathers, mildew, mold, wool, and house dust.

Physical examination revealed an underdeveloped and poorly nourished white woman in no acute distress. The temperature was 99.0°F, the pulse rate 78, the respiratory rate 18, and the blood pressure 130/90 mm. Hg. The chest was symmetrical, and auscultation revealed scattered inspiratory and expiratory wheezes on both sides. The heart was normal. The abdomen was markedly distended, and a fluid wave was elicited. A smooth liver edge was palpated 2 cm. below the right costal margin. There was no tenderness over the costovertebral angles. The lower extremities revealed 4-plus pitting edema. The tendon reflexes were normally active.

The urine was yellow, cloudy and alkaline with a specific gravity of 1.003. Proteinuria was 4 plus. The sediment disclosed 6 leukocytes, occasional epithelial cells, and many fat bodies per high-power field. The fat bodies were not doubly refractive. The hematocrit was 34 per cent, the hemoglobin was 10.5 Gm., and the leukocytes numbered 7,400 with 64 segmented granulocytes, 26 lymphocytes, 5 monocytes, 3 eosinophils, and 1 band cell. Platelets were adequate. A serologic test for syphilis was negative.

The blood urea nitrogen was 7 mg. per 100 ml. The total serum protein was 4.3 Gm. with 1.9 Gm. albumin and 2.5 Gm. globulin. Cephalin flocculation was negative, thymol turbidity was 0.6 units, and serum cholesterol was 253 mg. per 100 ml. Total serum lipids were 474 mg. Bromsulfalein retention was 7 per cent in 45 minutes. The fasting blood sugar was 83 mg. per 100 ml. Three L.E. cell preparations were negative. The serum alkaline phosphatase was 4.9 units. The total protein in a 24-hour collection of urine was 5 Gm. An X-ray film of the chest revealed marked fibrosis and calcific densities consistent with granulomatous disease.

The patient remained in the hospital 16 days. She was treated with a diuretic and ethacrynic acid. Peritoneal aspiration yielded 1,800 ml. of clear sterile transudate. Respiratory distress decreased, the edema gradually subsided, and a 25-pound loss of weight ensued. The patient then became asymptomatic, and an operation for the diagnosis of renal disease was performed.

Clinical Discussion

DR. NORMAN RAPP†: The patient had renal disease which was characterized by proteinuria, hypoalbuminuria, and recurrent episodes of edema. This is suggestive of the nephrotic syndrome. Some, however, insist that this diagnosis should not be made unless hyperlipemia is also present. Since this patient had normal lipid values, that diagnosis would not be in order. This definition of the nephrotic syndrome is not universally accepted, however, and an alternative definition has been provided by Arneil.[1] He stated that in the nephrotic syndrome 2 conditions are always present, i.e., gross proteinuria and hypoalbuminemia; 2 conditions are often present, i.e., hyperlipemia and subcutaneous edema; and some conditions are occasionally present, i.e., hypertension, hypoglobulinemia, azotemia, and red blood cells in the urine. By this definition, the present case is a nephrotic syndrome. There are many causes of this condition.

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The first cause of the nephrotic syndrome is an intrinsic renal disease such as glomerulonephritis. The second cause is infectious disease. Syphilis, for example, may cause this syndrome. In this patient, however, there is no indication of luetic infection, and the serologic test for syphilis was negative. Subacute bacterial endocarditis is also a possible cause, although there is no suggestion of that in the present case. Tuberculosis also should be mentioned; I know of no instance in which it has been shown to be the cause of this syndrome. A third group of causes is the toxins such as heavy metals and drugs. There is no evidence of this in the protocol. Allergy is the fourth cause; poison oak, bee stings, and serum sickness may be causative but are not evident in this history. Also in this group are the inhaled plant pollens. We are told that this patient had several allergies and was sensitive to house dust and mold. However, the nephrotic syndrome due to allergy tends to have seasonal exacerbations and also to be associated with an eosinophilia. Neither of these was noted, and this possibility seems unlikely. The next group of causes is mechanical and is associated with an increased pressure in the renal veins, on 1 or both sides. Examples are tricuspid-valve disease, constrictive pericarditis, and renal-vein thrombosis. Only the last of these seems possible in the present case and will be referred to later. The sixth group of causes is the generalized diseases that include amyloidosis, multiple myeloma, systemic lupus erythematosus, and diabetes mellitus. The last group is the heredofamilial conditions which have their onset in the neonatal period and are rapidly progressive and regularly fatal.

From these causes the following possibilities emerge: intrinsic renal disease, renal-vein thrombosis, and the generalized diseases, especially amyloidosis. Amyloidosis can cause this syndrome, either in the primary or secondary type. Secondary amyloidosis is now quite uncommon, however, because the debilitating diseases which predispose to it are often successfully treated. This patient does have a history of tuberculosis, but it seemed to be under good control. Primary amyloidosis may also cause the nephrotic syndrome but usually does so late in the course of the disease, and the condition is characterized by hypertension and a slow deterioration of renal function. While it cannot be definitely ruled out here, it does seem unlikely.

Lupus erythematosus is another cause of the nephrotic syndrome. Perhaps a quarter of the cases develop it, and it is usually a late complication appearing after several other body systems have been affected. Rarely does it appear as a presenting manifestation. The blood urea nitrogen is usually normal, and gross or microscopic hematuria is usually prominent. Moreover, it seems to occur in 2 forms which are differentiated by the blood cholesterol level. In patients with an elevated blood cholesterol the condition runs a long course with remissions and exacerbations and responds to steroid therapy. In patients with a normal cholesterol, as was present here, the illness is acute, the course is rapid, and death usually follows within 5 months of the onset of the edema. The present case does not seem to fit into either of these categories.

Renal-vein thrombosis may produce the nephrotic syndrome as the only manifestation, or it may include a number of other features such as hematuria, flank pain, and enlargement of the kidney. Thromboembolic phenomena are usually evident elsewhere, especially in the leg or pulmonary veins, and the patient is usually febrile and has an elevated leukocyte count. A feature that is almost constant in the nephrotic syndrome secondary to renal-vein thrombosis is a markedly elevated cholesterol level, often as high as 800 mg. per cent. Altogether, it does not seem likely that the patient had renal-vein thrombosis as the cause of her nephrotic syndrome.

The last group of conditions to be considered is the intrinsic renal diseases. These account for about two-thirds of the total cases in adults. The 2 conditions in this group to be discussed are the proliferative or Type I glomerulonephritis and the membranous or Type II glomerulonephritis. The former is characterized by abrupt onset, albuminuria, hematuria, hypertension, and edema, but any of these features may be absent. It usually occurs in children or young adults and is frequently preceded by an upper respiratory infection 1 to 4 weeks before the onset. The signs and symptoms tend to regress rapidly, and the average patient recovers in 3 to 4 weeks. When the condition occurs in adults and is progressive, hypertension is a prominent feature.

In contrast, membranous glomerulonephritis is usually not preceded by an infection, the blood pressure is only slightly or moderately elevated, and relapses are common. All of these features are present in this case. The usual presentation is subcutaneous edema which primarily affects the ankles. Ascites and pleural effusion may also occur. There are usually microscopic hematuria and leukocytes and granular casts in the urine. In severe cases the blood urea nitrogen is elevated, but not necessarily. There is usually hyperlipemia which is not present here. A final characteristic to be mentioned is that there may be a good response to therapy, such as diuretics, and this certainly occurred in this case.

It is my impression that membranous glomerulonephritis is the most likely diagnosis in this case although other conditions such as renal-vein thrombosis and amyloidosis cannot be completely ruled out.

Dr. Arthur E. Rosenbaum*: May we see the X-ray films, please.

Dr. James H. Hepp†: There is an anterior-posterior view and a lateral. They show extensive fibrosis, especially of the upper lobes, with strands extending into the apices from both hilar regions. There are also scattered deposits of calcium, and pleural thickening is pronounced over the apices. These films are interpreted as showing evidence of old tuberculosis. A single rarified focus, presumably a cavity, is present in the right middle lobe.

Dr. Rosenbaum: Would you please continue, Dr. Hand.

Dr. Dennis Hand‡: I think, too, that we are dealing here with a case of the nephrotic syndrome. Hyperlipemia is not a constant feature and depends on the metabolic condition of the patient. When emaciation is pronounced, it may be absent. The doubly refractile lipid bodies would have the same significance. It would be easy to assume membranous glomerulonephritis here, but I don't think it's quite that simple. There are too many other features to be accounted for.

I note that the illness began with swelling of one leg. The protocol doesn't say whether the leg was red or otherwise describe the type of swelling. A mass in the abdomen invading the veins of the leg and progressing to the inferior vena cava could give this picture. Subsequent events, however, do not bear out this suggestion.

Amyloid is a strong possibility and fits in with a history of long-continued pulmonary tuberculosis. In this case we not only have the nephrotic syndrome, but we apparently have hepatomegaly as well. The evidences of liver disease, that is, hypoproteinemia and bromsulfalein retention, are striking. Amyloidosis is usually a progressive disease, but remissions may occur.

Constrictive pericarditis may also give the nephrotic syndrome, and tuberculosis of the pericardium is an important factor. We don't really have evidence of heart disease, however. Systemic lupus may pretty well be ruled out on the basis of the clinical course plus the negative L.E. cell preparations.

The sister's history here is very interesting; in fact, her history might well have been a CPC too. There are, of course, familial diseases that give the nephrotic syndrome, but they are usually manifest earlier, and it seems unlikely that unilateral nephrectomy would be curative.

I would like to think amyloid is the principal lesion, but I think the remission tends to rule it out. I will therefore make as my diagnosis renal-vein thrombosis. Tuberculosis may be contributory.

Dr. Rosenbaum: Most of your reason for diagnosing renal-vein thrombosis is based on the unilateral nature of the edema. Is that really incompatible with other causes of the nephrotic syndrome?

Dr. Hand: I would expect bilateral renal disease to cause symmetrical dependent edema. It's the absence of a consistently progressive course that leads me away from amyloidosis, however.

Dr. Thomas M. Peery*: Could paracentesis improve the circulation well enough to give a remission?

Dr. Hand: Yes, I believe that could happen and by just that means.

Dr. Smith: We know the patient's course only to the time of operation. If the course thereafter were steadily progressive, would you then reconsider amyloidosis?

Dr. Hand: Yes, I would.

Dr. Bettman†: How did you rule out hypothyroidism?

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‡ Clinical Instructor in Medicine, George Washington University School of Medicine.

* Professor of Pathology, George Washington University School of Medicine.

† Visiting physician.

Dr. Hand: There is really no clinical evidence of hypothyroidism given. Also, this would have responded to thyroid medication.

Dr. Rosenbaum: Would the interval of 8 years after tuberculosis tend to exclude amyloid as a cause of the nephrotic syndrome?

Dr. Hand: This long latent period is not incompatible with amyloidosis. I think we should realize that although clinical evidence of tuberculosis may be scant or wanting, tissue destruction, perhaps in small amounts, is nevertheless often taking place.

Dr. Smith: What is the likelihood that renal-vein thrombosis impairing the function of the kidneys would persist for as long as 9 months?

Dr. Hand: This is quite compatible with renal-vein thrombosis.

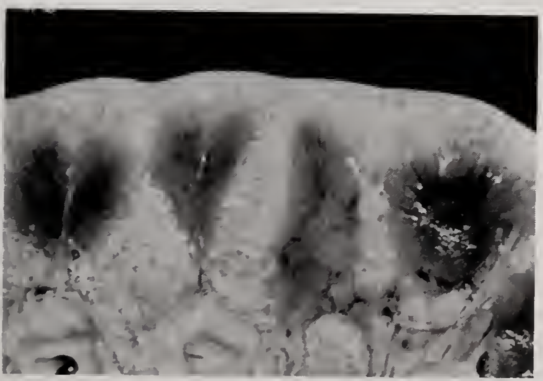

FIG. 1. Cut surface of kidney showing pallid foci of macrophage infiltration.

Clinical Diagnoses

Dr. Rapp: Membranous glomerulonephritis.
Dr. Hand: Renal-vein thrombosis.

Pathology Discussion

(Autopsy No. 5907)

Dr. Smith: The record we have been discussing pertained to a hospitalization elsewhere. The patient was admitted here for renal biopsy. At that time the blood urea nitrogen and serum creatinine were normal, a 4-plus albuminuria was noted, and the creatinine clearance was 85 ml. per min. An intravenous pyelogram disclosed slight enlargement of both kidneys with poor concentration and delayed excretion on both sides. A needle biopsy of the right kidney revealed amyloidosis of the glomeruli. The patient was discharged after 17 days.

She was re-admitted approximately 7 months later for evaluation of her pulmonary tuberculosis. While her renal condition was asymptomatic, laboratory investigations revealed a 3-plus albuminuria, a blood urea nitrogen of 99 mg., and a serum creatinine of 8.6 mg. During the hospital course oliguria developed, protein excretion increased, and the creatinine clearance decreased to 38 ml. per min. and then to 13 ml. per min. The patient excreted as much as 11 Gm. of protein per liter, and at one time her serum calcium and phosphorus were 7.8 and 9.3 mg. per 100 ml. She died in renal failure 10 weeks after admission.

Autopsy examination revealed a heart of 325 Gm. that was essentially normal. The right and left lungs weighed 625 and 500 Gm., respectively. Each disclosed fibrosis, calcification, and cavity formation in the upper lobes. In the left lower lobe a focus of pale gray discoloration cut with a gritty sensation and this indicated calcification of the alveolar walls. The process at this site was metastatic calcification, and with a calcium-phosphorus product of over 70, it is not unexpected that calcium would be deposited in normal tissue.[2]

The liver weighed 950 Gm. and revealed slight fatty metamorphosis. The spleen weighed 96 Gm. and disclosed slight focal amyloidosis of the small arteries. Amyloid was also discovered in the adrenals but was slight in amount and not evident grossly.

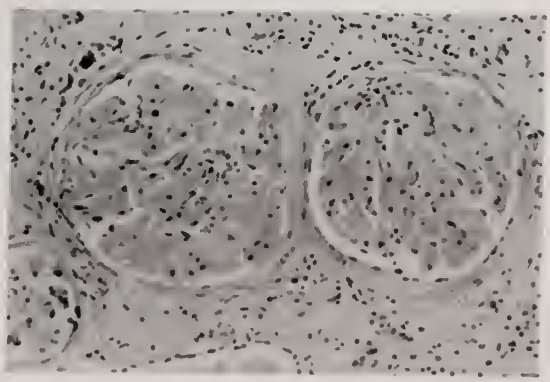

FIG. 2. Glomeruli uniformly infiltrated with amyloid.

The right and left kidneys weighed 210 and 200 Gm. respectively. The external and cut surfaces were finely stippled with pale yellow. This discoloration was due to macrophages in the interstitial tissue (figure 1). On histologic examination the glomeruli are seen to be regularly large and abundantly filled with a clear pink hyaline material that is, in fact, amyloid (figure 2). The intervening regions show absence of renal tubules except for the few that remain, which are slightly dilated. Thus the case is one of chronic fibro-

(Continued on page 186)

President's Page

THE D. C. HEARINGS ON HEALTH

In mid-January of this year the Health and Welfare Committee of the City Council (Mrs. Polly Shackleton, Chairman) held hearings on recommendations to improve the City's health services. The first 4 sessions scheduled expert witnesses to testify, and the evening session was reserved for interested members of the community.

I had the privilege of presenting some of the views of the Medical Society of the District of Columbia because we represent a great portion of the medical community. My remarks were of a general nature.

I mentioned that the President of the District Medical Society, soon after receiving news of the resignation of Dr. Murray Grant as Director of the Department of Health, forwarded a letter to Mayor Washington in which he noted our concern for the total health needs in Washington and stated that this was "a most opportune time to consider the entire organizational structure involved in filling the health needs of our citizens."

It is the opinion of our members who have been involved with problems of the District Health Department that the present organization is cumbersome and cannot be properly controlled by an individual; that a strong, but preferably not too large, Health Council be formed at the City Council level to direct the affairs of health, not in an advisory capacity but authoritatively.

The present delivery of health care in the District of Columbia is fragmentary, individualistic, and void of pattern. Many clinics have been set up with no proper authority or direction, little funding, and without thought to the overall needs of Washington. While individual areas in the community have a selfish attitude toward their sector of the District, there still must be coöperative effort in order to build a solid base for good health-care delivery, keeping in mind that the problems of the health care of the poor are critical and warrant priority action.

The Committee was advised that the District Medical Society strongly supports the present and more aggressive stand of the American Medical Association. The medical profession must take the leadership in constructive community efforts to provide health services in the community and to eliminate adverse environmental conditions that affect the health of the poor. It was emphasized that health care for the poor should be a vital part of the overall health-care system. We strongly support programs to attract and retain doctors in slum areas, to develop educational materials related to the cultural backgrounds of the poor, to support adequate nutritional services, and to increase participation of minority-group doctors.

I reported that the District Medical Society has and will continue to work toward the improvement of health care. Monthly meetings have been held with the Director of the Health Department to discuss problems and to find out how we may be of service. At present the monthly meeting is also attended by the President of the Medico-Chirurgical Society of D. C. Through our Utilization Committee and Fee Review Committee we have aided the Health Department in discouraging overutilization of facilities and/or services both in Medicare and Medicaid programs.

Our Public Welfare Committee has actively started work on such problems as funding; neighborhood health centers, their relationship to hospitals and/or the Health Department, and the role of voluntary help; and health manpower, both professional and paramedical. Other committees, such as Environmental Health, Physician Placement and Liaison with Allied Professions, to mention a few, meet regularly to discuss how to solve the many problems involved.

Yes, the District Medical Society is very cognizant of the problems of health care in the District, is very concerned about them, is sensitive to the changes that are necessary, and will continue in every way possible to offer its services toward the solution of these problems.

Frank S. Pellegrini

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Non-nursing mothers may begin Ovulen-21 immediately after delivery, on the day of departure from the hospital or at the first postpartum visit, as desired. It is recommended that nursing mothers begin Ovulen-21 four weeks after delivery.

A small fraction of the hormonal agents in oral contraceptive pills has been identified in the milk of mothers receiving these drugs. The long-range effect on the nursing infant cannot be determined at this time.

Actions—Ovulen acts to prevent ovulation by inhibiting the output of gonadotropins from the pituitary gland. Ovulen depresses the output of both the follicle-stimulating hormone (FSH) and the lutenizing hormone (LH).

Special note: Oral contraceptives have been marketed in the United States since 1960. Reported pregnancy rates vary from product to product. The effectiveness of the sequential products appears to be somewhat lower than that of the combination products. Both types provide almost completely effective contraception.

An increased risk of thromboembolic disease associated with the use of hormonal contraceptives has now been shown in studies in both Great Britain and the United States. Other risks, such as those of elevated blood pressure, liver disease and reduced tolerance to carbohydrates, have not been quantitated with precision.

Long-term administration of both natural and synthetic estrogens in subprimate animal species in multiples of the human dose increases the frequency of some animal carcinomas. These data cannot be transposed directly to man. The possible carcinogenicity due to the estrogens can be neither affirmed nor refuted at this time. Close clinical surveillance of all women taking oral contraceptives must be continued.

Indication—Ovulen is indicated for oral contraception.

Contraindications—Patients with thrombophlebitis, thromboembolic disorders, cerebral apoplexy or a past history of these conditions, markedly impaired liver function, known or suspected carcinoma of the breast, known or suspected estrogen-dependent neoplasia, and undiagnosed abnormal genital bleeding.

Warnings—The physician should be alert to the earliest manifestations of thrombotic disorders (thrombophlebitis, cerebrovascular disorders, pulmonary embolism, and retinal thrombosis). Should any of these occur or be suspected the drug should be discontinued immediately.

Retrospective studies of morbidity and mortality in Great Britain and studies of morbidity in the United States have shown a statistically significant association between thrombophlebitis and pulmonary embolism and the use of oral contraceptives. There have been three principal studies in Britain[1-3] leading to this conclusion, and one[4] in this country. The estimate of the relative risk of thromboembolism in the study by Vessey and Doll[3] was about sevenfold, while Sartwell and associates in the United States found relative risk of 4.4, meaning that the users are several times as likely to undergo thromboembolic disease without evident cause as nonusers. The American study also indicated that the risk did not persist after discontinuation of administration, and that it was not enhanced by long-continued administration. The American study was not designed to evaluate a difference between products. However, the study suggested that there might be an increased risk of thromboembolic disease in users of sequential products. This risk cannot be quantitated, and further studies to confirm this finding are desirable. Retrospective studies in Great Britain have shown a statistically significant association between cerebral thrombosis and embolism and the use of oral contraceptives. This has not been confirmed in the United States.

Discontinue medication pending examination if there is sudden partial or complete loss of vision, or if there is a sudden onset of proptosis, diplopia or migraine. If examination reveals papilledema or retinal vascular lesions, medication should be withdrawn.

Since the safety of Ovulen in pregnancy has not been demonstrated, it is recommended that for any patient who has missed two consecutive periods pregnancy should be ruled out before continuing the contraceptive regimen. If the patient has not adhered to the prescribed schedule the possibility of pregnancy should be considered at the time of the first missed period.

A small fraction of the hormonal agents in oral contraceptives has been identified in the milk of mothers receiving these drugs. The long-range effect to the nursing infant cannot be determined at this time.

Precautions—The pretreatment and periodic physical examinations should include special reference to the breasts and pelvic organs, including a Papanicolaou smear since estrogens have been known to produce tumors, some of them malignant, in five species of subprimate animals. Endocrine and possibly liver function tests may be affected by treatment with Ovulen. Therefore, if such tests are abnormal in a patient taking Ovulen, it is recommended that they be repeated after the drug has been withdrawn for 2 months. Under the influence of progestogen-estrogen preparations preexisting uterine fibromyomas may increase in size. Because these agents may cause some degree of fluid retention, conditions which might be influenced by this factor, such as epilepsy, migraine, asthma, cardiac or renal dysfunction, require careful observation. In breakthrough bleeding, and in all cases of irregular bleeding per vaginam, nonfunctional causes should be borne in mind. In undiagnosed bleeding per vaginam adequate diagnostic measures are indicated. Patients with a history of psychic depression should be carefully observed and the drug discontinued if the depression recurs to a serious degree. Any possible influence of prolonged Ovulen therapy on pituitary, ovarian, adrenal, hepatic or uterine function awaits further study. A decrease in glucose tolerance has been observed in a significant percentage of patients on oral contraceptives. The mechanism of this decrease is obscure. For this reason, diabetic patients should be carefully observed while receiving Ovulen therapy. The age of the patient constitutes no absolute limiting factor, although treatment with Ovulen may mask the onset of the climacteric. The pathologist should be advised of Ovulen therapy when relevant specimens are submitted. Susceptible women may experience an increase in blood pressure following administration of contraceptive steroids.

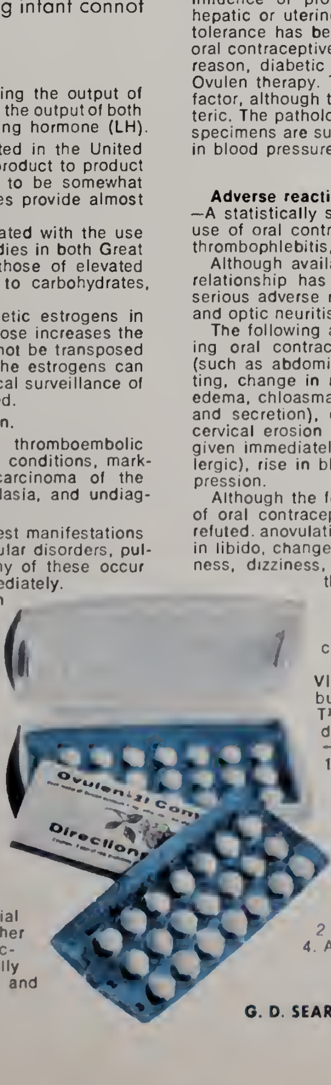
Adverse reactions observed in patients receiving oral contraceptives—A statistically significant association has been demonstrated between use of oral contraceptives and the following serious adverse reactions: thrombophlebitis, pulmonary embolism and cerebral thrombosis.

Although available evidence is suggestive of an association, such a relationship has been neither confirmed nor refuted for the following serious adverse reactions: neuro-ocular lesions, e.g., retinal thrombosis and optic neuritis.

The following adverse reactions are known to occur in patients receiving oral contraceptives: nausea, vomiting, gastrointestinal symptoms (such as abdominal cramps and bloating), breakthrough bleeding, spotting, change in menstrual flow, amenorrhea during and after treatment, edema, chloasma or melasma, breast changes (tenderness, enlargement and secretion), change in weight (increase or decrease), changes in cervical erosion and cervical secretions, suppression of lactation when given immediately post partum, cholestatic jaundice, migraine, rash (allergic), rise in blood pressure in susceptible individuals and mental depression.

Although the following adverse reactions have been reported in users of oral contraceptives, an association has been neither confirmed nor refuted: anovulation post treatment, premenstrual-like syndrome, changes in libido, changes in appetite, cystitis-like syndrome, headache, nervousness, dizziness, fatigue, backache, hirsutism, loss of scalp hair, erythema multiforme, erythema nodosum, hemorrhagic eruption and itching.

The following laboratory results may be altered by the use of oral contraceptives: hepatic function: Increased sulfobromophthalein retention and other tests; coagulation tests: increase in prothrombin factors VII, VIII, IX and X; thyroid function: increase in PBI and butanol extractable protein bound iodine, and decrease in T^3 uptake values; metyrapone test and pregnanediol determination.



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Editorials

A Memorial Tribute to Dr. Daniel L. Borden*

We are assembled here to offer our tribute of affection and esteem for Dr. Daniel L. Borden, whose life and work have spoken with persuasive and enduring eloquence to each of us. It is fitting that we should be in this Chapel of the Presidents, sitting upon these pews from earlier buildings in a place of worship symbolizing the simple piety and elevated patriotism to which his life bore constant witness. Again we hear the ancient Scripture passages, loved by him, which bring instruction and comfort at this moment as at no other time in life, and here we listen to the music which lifted his heart and inspires us even now to higher endeavor.

Dan Borden was first of all a skillful and prominent physician. In this vocation he was a follower of his Lord, who was called "the Great Physician." Like his Lord he was also a teacher, a master of the teaching art. As a founder of the Washington Academy of Medicine, Past President of the George Washington University Medical Society, physician to the football team, contributor to scientific journals, and through many other acts he has left an enduring legacy.

He loved and served his country in peace and in 3 wars. In World War II his sons also served, and one of them gave his life in action. For Dr. Borden patriotism was next to godliness. He invested the term "patriot" with glowing meaning, a message needed at this time when the word is demeaned and neglected. May his mantle of patriotism fall on the youth of today.

He knew the value of alternating between hard work and abundant play. He loved life—all aspects of it—but as a sportsman rejoiced to be a yachtsman of the highest order. He was exultantly happy in a sailboat. For many years he was the Commodore of the Crescent Yacht Club at Chaumont, New York. All this did for him what physicians believe everyone needs—a health-giving and recreative experience.

An Affectionate Farewell

I cannot be dispassionate about Dr. Borden. He was my teacher for more than 40 years. During my surgical residency I could set my watch by his punctual arrival to make rounds. During that time his expressed approval aided Miss Rosalee Brown to decide to marry me. I realized better how I respected my father from the way he responded to his father, Dean Borden.

Always courteous and kind, he was nevertheless unbendingly honest and ethical, both professionally and socially. Most impressive was the gentle affection so generally accorded him by the nurses who aided him in his role as "the Good Physician."

Since I do not expect to see his like again I am eternally grateful to have known him whom I loved so well.

Donald Stubbs, M.D.

Even more significant than hard work and invigorating play, despite his crowded days, was the time he set aside for his wife and family. He was a good home-maker.

Finally, in the highest and best sense he was a deeply religious man. Without parading his piety he worshipped his God, kept his personal spiritual disciplines, loved the Bible, the great hymns, the order of worship, and strong preaching. There was a natural masculinity to his way of faith, a manliness about his spiritual expression which unconsciously made him an example to others.

By the richness of his work and the quality of his character, he has left us an enduring legacy. With grateful hearts for his life and service as physician, educator, home-maker, sportsman, churchman, warm friend, we give him back to the tender care of the Heavenly Father Who does all things well.

Edward L. R. Elson, D.D.
Pastor, The National
Presbyterian Church

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* Read at the funeral services for Dr. Borden, held in the Chapel of the Presidents, The National Presbyterian Church, Washington, D. C., December 13, 1969.

The Primacy of Prevention

It would appear that curative medicine has reached its zenith. Organ transplants, renal dialysis, and intensive care units have demonstrated the capabilities of physicians and scientists to excel in the repair of the human body, but to believe that this is the avenue which will lead us to the improvement of the quality of life is to be sadly mistaken. Neither will the advances in the delivery of medical services to the sick add a great deal to this effort, no matter how accessible, how dignified, nor how coördinated. Furthermore, it is about time that the physicians in this country turn their attention more to the promotion and maintenance of the health of all individuals. This, however, he cannot do alone. The most important diseases which have arisen out of our affluent way of life are in reality multifaceted social problems and require the coördinated attack of many diversified disciplines. The physician of tomorrow will be concerned about what is going on in his community and join hands with both lay and other professionals who are attempting to improve the quality of life. This is what some of our medical students are telling us, and already many young physicians have made a commitment to community involvement.

Here then are some examples of how we can make prevention a really tangible and workable effort:

1. The prevention of accidents, which are the first cause of death for those from 1 to 30 years of age, will not be solved by better emergency procedures or by adapting military helicopter transportation to civilian life. It will require a partnership of health people with city-planners, road-builders, automobile–designers, and educators.

2. The results of environmental pollution become medical problems, but the prevention of noise and radiation contamination and air and water pollution is the responsibility of society as a whole. The widespread use of pesticides and drugs poses unique problems. The problems in this area are due in fact to the military-industrial complex of our times, the greed of our large business and commercial establishments, and to the lack of courage on the part of Congress, either in providing adequate regulations and restraints or making available sufficient financial resources.

3. Prevention of the epidemic of coronary heart disease and of cancer will not be achieved by bigger intensive care units or larger cobalt machines but rather by working with the food industries and technology and with representatives of the tobacco-growers and manufacturers and by support of the Federal Trade and Communication Commissions.

4. Our infant mortality will not be prevented by better nurseries alone, but we must join hands with those who are fighting for better housing, minimum wages, welfare rights organizations, family planning, and reduction of social and emotional stress.

5. We have the tools with which to immunize against a number of diseases. Yet all too few children and adults receive the benefits. Again, this is not a medical problem; it is one of health education and social application of what we know, and so we may have to join hands with the behavioral scientists, the motivational psychologists, and the public relations experts to help us achieve our goals.

Every physician in the District has an opportunity to begin to put this into practice. When your next patient faces you, don't be satisfied with just writing a prescription, but find out about his family, the children's immunization, and the father's last health examination, or at least his present ailments. This is a challenge to all physicians, and many have already accepted it.

Paul B. Cornely, M.D.
President, American
Public Health Association

"Rambling Thoughts"

"I delight to express my thoughts in verse," says Dr. Thomas R. Rees in a brief introduction to his recently published booklet of poems, most of them written with good-natured humor.

His strenuous early life on a farm in southern Idaho is recalled in his "Autobiography." During those years he became proficient at riding horseback, feeding pigs, and herding cattle. Moving to the city, he worked his way through college as a hotel clerk, served in the Army, married, and then went on to secure his medical degree:

> "I operated an elevator at the Capitol nights,
> And studied anatomy in between flights."

He never lost his love for the West; this is expressed in his "I Want to Go Back," "My Old Home," and "The Farm Boy." However, he came

East to study medicine at George Washington University, and his affection for the Capital City has never diminished—he tells it in "I Love This Town."

Looking back on a long life of medical service and civic participation, Dr. Rees, in light verse, combines nostalgia and humor. Among his favorite subjects are modern woman, modern music, TV, baseball, seasons of the year, and philosophical comments on both life and death.

Copies of this delightful collection of poems, marking a lifetime of experiences, may be obtained from Dr. Rees at 4715 32nd Street, N.W.

A. L. E.

HEALTH DEPARTMENT NOTES

Treatment Team Concept

People who have been in hospitals only as visitors are rarely aware of the extent to which a physician may depend upon professionals in other disciplines in the treatment of his patients. To many visitors the treatment of hospitalized patients seems to be provided for the most part by the physicians with the assistance of registered nurses.

At D. C. General Hospital, where a large percentage of patients are indigent, most cases are complicated by lack of prior medical care, long-term malnutrition, and other health problems. To help with these complications, the physician often finds it advantageous to utilize the "team concept" in carrying out the treatment plan for the patient.

After completing the patient's case history and a physical examination the physician establishes a tentative diagnosis and develops a basic course of treatment. He may have ordered laboratory tests, X-ray examinations, and diagnostic radioisotope readings to verify his diagnosis.

Shortly after the patient is admitted to the hospital the physician may find it necessary to call upon the Social Services Division to explore problems which could interfere with the patient's response to treatment. These problems include providing care for small children at home, preparing the patient and family to deal with crippling conditions which may alter the patient's wage-earning ability, and assisting the patient to find ways of learning new skills. Once drawn into the case, the social worker is a member of the treatment team for a minimum of 30 days after the patient's discharge from the hospital.

Drug Abuse—Manifestations of the Narcotic Abuser*

(Heroin—Demerol—Morphine, etc.)

These individuals are not frequently seen in school, and they usually begin by drinking paregoric or cough medicines containing codeine. The presence of empty bottles in wastebaskets or on school grounds is a clue.

1. Inhaling heroin in powder form leaves traces of white powder around the nostrils, causing redness and rawness.
2. Injecting heroin leaves scars on the inner surface of the arms and elbows ("mainlining"). This causes the student to wear long-sleeved shirts most of the time.
3. Users often leave syringes, bent spoons, cotton and needles in lockers; these are telltale signs of an addict.
4. In the classroom the pupil is lethargic, drowsy. His pupils are constricted and fail to respond to light.

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* This information is reproduced from "Parental Alert," copies of which may be obtained on request to the Broward County Medical Association, 2200 South Andrews Ave., Fort Lauderdale, Fla. 33316.

To help the malnourished the physicians may consult with one of the hospital's registered dietitians. In arriving at a suitable diet consideration is given both to the extent of malnutrition and to the illness which brought about hospitalization. Since changes in the patient's condition may require adjustments in the diet plan, the dietitian also becomes part of the treatment team. Often the dietitian is requested to develop a diet plan for the convalescent period and sometimes for an indefinite time thereafter.

The physician may decide to consult with the staff of the Physical Medicine and Rehabilitation Division on a case, and various types of therapy may be prescribed. A registered therapist will join the treatment team, possibly first at the patient's bedside and later in the Physical Therapy quarters. Treatment with the use of heat, light, water, sound and electricity may include massage, therapeutic exercises, and functional activities such as training in walking. Regular appointments are arranged to continue during the patient's stay at the hospital and as an outpatient.

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A registered occupational therapist also may join the treatment team to provide therapeutic exercise and psychologic support. Occupational therapists encourage disabled patients to learn new and easier ways to perform routine tasks. Self-care and homemaking activities are taught and prevocational evaluations and training may be arranged. Special hand splints and self-help devices are developed to fit individual requirements. Elastic stockings, corrective shoes, prostheses, and body braces are available.

The crafts, such as weaving, rugmaking, painting, metal-craft, and other creative activities, are supervised by occupational therapists. Aside from their exercise value, such activities serve to alleviate the boredom many patients experience after a time in the hospital setting. Each type of exercise provided by the therapist as a part of the overall treatment program has been approved in advance by the physician.

Depending on the type of illness or injury, the physician at intervals may request new laboratory tests, X-ray examinations, and radioisotope readings in order to assess the rate of the patient's recuperation. In certain diseases X-ray or cobalt treatments may be ordered.

By utilizing the team concept the physician does not reduce his role in the treatment of a patient but instead augments that role. The goal of returning the patient to his normal routine or adjusting to the limitations imposed by a disability is more readily achieved through the physician's judicious selection of professionals as members of the treatment team and his supervision of all facets of the treatment procedures.

RAYMOND L. STANDARD, M.D., M.P.H.
Acting Director, D. C. Department of Public Health

ACOG Statement on Rubella Vaccination*

THE EXECUTIVE COMMITTEE of the American College of Obstetricians and Gynecologists has approved the following statement regarding rubella vaccination:

1. All children between the ages of 1 and 12 should be immunized against rubella.
2. Women of childbearing age should be immunized against rubella when:
   (a) the need for immunization has been demonstrated by testing for susceptibility;

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* Reprinted from ACOG *Newsletter*, October 1969.

(b) the presence of a concurrent pregnancy has been eliminated;
(c) the patient has been thoroughly instructed that pregnancy should be avoided for 2 months after vaccination; and
(d) the patient has been informed of the potential dangers if pregnancy occurs during or immediately subsequent to vaccination.

3. As the vaccine becomes available, families should consult their physicians about immunization of their children, and nonpregnant women of childbearing age should consult their physicians to determine if immunization is desirable.

4. Appropriate community programs should be developed to educate the public about the availability of rubella vaccine and to assist in the elimination of rubella as rapidly as possible.

5. Surveillance of clinical rubella and suspected congenital infections should be intensified to evaluate the success of immunization efforts.

Plans for Multitest Facility Services at George Washington

A RESEARCH STUDY is being undertaken by George Washington University Medical Center to determine means by which it can facilitate community physician efforts to improve health-care delivery. A new Department of Clinical Engineering has been set up under the direction of Dr. C. A. Caceres, formerly with the Public Health Service Medical Systems Development Laboratory. The new Department is establishing a Multitest Facility for physician use which is scheduled to open late in the spring. In the meantime, an educational program, including seminars and mailings of scientific journal reprints, will be established.

Patients will be admitted to the Multitest Facility on the request of physicians. Results and records of the batteries of tests performed will be sent to the referring physician for his use. The tests will include, among others, automated electrocardiography, spirography, audiometry, tonometry, vision tests, Pap smear analysis, blood chemistry battery, chest X-ray films, and an automated historical review. Multitest Facility services will be charged to the patient, or as directed by the referring physician. Because of volume and facility and personnel concentration, savings should be possible in many instances.

All results of this continuing research project in health services delivery will be made available to

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all community physicians at periodic intervals. At this time and in order to plan more effectively, the Department of Clinical Engineering would be pleased to receive any suggestions that practicing physicians in the community would care to make about this service. They may be directed to Dr. Caceres at 2300 K Street, N.W., Washington, D. C. 20037; telephone (202) 331-6871.

NEW MEMBERS

Active

Robert F. Beller, M.D. Office: 5225 Loughboro Road, N.W. Born in Washington, D. C. Medical degree: Georgetown University, 1964. Specialty: Anesthesiology.

Joseph C. Chapman, Jr., M.D. Office: 127 Pleasant Street, Melrose, Mass. Born in Poplar Bluff, Mo. Medical degree: Howard University, 1963. Specialty: Otolaryngology.

David R. Carlson, M.D. Office: 825 New Hampshire Avenue, N.W. Born in Evanston, Ill. Medical degree: George Washington University, 1960. Specialty: Obstetrics and Gynecology.

Thomas M. Finkelor, M.D. Office: 253-A G Street, S.W. Born in Pittsburgh, Penna. Medical degree: University of Florida, 1968. Specialty: General Practice.

Margaret L. Garrett, M.D. Office: 2141 K Street, N.W. Born in Haddonfield, N. J. Medical degree: University of Pennsylvania, 1956. Specialty: Psychiatry.

Monte A. Herman, M.D. Office: 2121 Pennsylvania Avenue, N.W. Born in Washington, D. C. Medical degree: George Washington University, 1959. Specialty: Internal Medicine (Pulmonary Diseases).

Stephen E. Groban, M.D. Office: 1330 New Hampshire Avenue, N.W. Born in New York, N. Y. Medical degree: St. Louis University, 1968. Specialty: General Practice.

Leslie G. Kirschner, M.D. Office: 5225 Connecticut Avenue, N.W. Born in Kansas City, Mo. Medical degree: University of North Carolina, 1959. Specialty: Psychiatry and Psychoanalysis.

Edward S. Klotz, M.D. Office: 9304 Edmonston Road, Greenbelt, Md. Born in New York, N. Y. Medical degree: University of Michigan, 1966. Specialty: Internal Medicine.

Norman A. Lieberman, M.D. Office: 2121 Pennsylvania Avenue, N.W. Born in New York, N. Y. Medical degree: New York Medical College, 1963. Specialty: Internal Medicine.

Jerome L. Missel, M.D. Office: 1731 S Street, N.W. Born in Streator, Ill. Medical degree: Columbia University, 1969. Specialty: General Practice.

Steve R. Pieczenik, M.D. Office: 1330 New Hampshire Avenue, N.W. Born in Havana, Cuba. Medical degree: Cornell University, 1968. Specialty: General Practice.

Peter B. Polatin, M.D. Office: 930 South Saint Asaph Street, Alexandria, Va. Born in New York, N. Y. Medical degree: Columbia University, 1968. Specialty: General Practice.

John Stubenbord, M.D. Office: 1801 Eye Street, N.W. Born in Jersey City, N. J. Medical degree: Cornell University, 1927. Specialty: General Practice.

Halley B. Taylor, Jr., M.D. Office: 411 N Street, S.W. Born in Wilson, N. C. Medical degree: Howard University, 1942. Specialty: Radiology.

Boris G. Vlalukin, M.D. Office: 6225 Dominion Drive, Oxon Hill, Md. Born in Novisad, Yugoslavia. Medical degree: University of Belgrade, 1961. Specialty: Internal Medicine.

Associate

Paul A. Dorn, Jr., M.D. Office: 4000 Tunlaw Road, N.W. Born in Cambridge, Mass. Medical degree: Georgetown University, 1965. Specialty: Ophthalmology.

Heinz J. Lorge, M.D. Office: 9 Cherbourg Court, Potomac, Md. Born in Mainz, Germany. Medical degree: Johann-Wolfgang-Goethe University (Frankfurt), 1933. Specialty: Internal Medicine (Pulmonary Diseases).

Robert H. Williams, M.D. Office: 12118 David Drive, Silver Spring, Md. Born in Washington, D. C. Medical degree: Howard University, 1964. Specialty: General Practice.

Resident-Intern

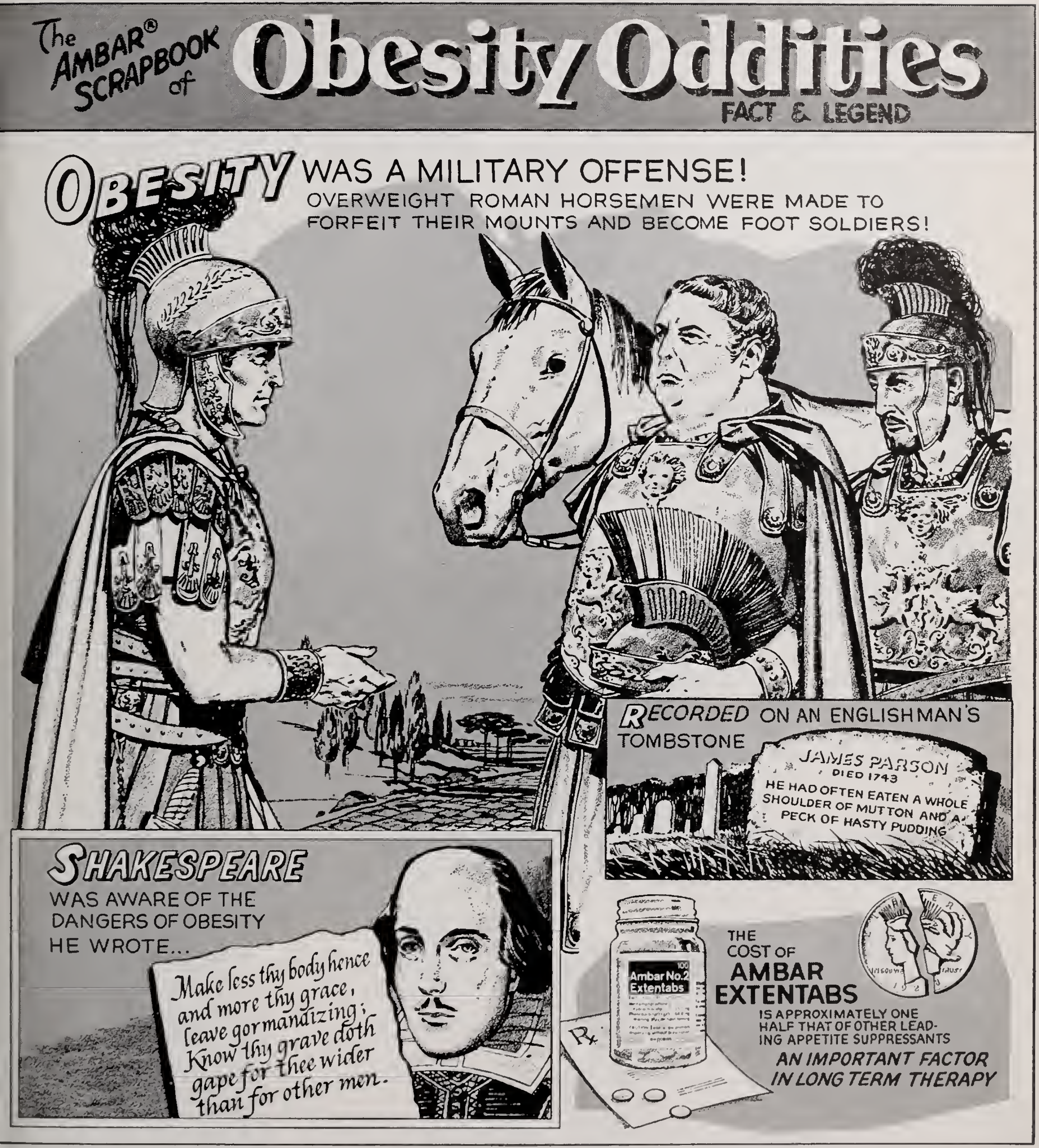
Jean A. Linzau, M.D. Office: 1507 Irving Street, N.E. Born in Guadeloupe, French West Indies. Medical degree: Howard University, 1966.

LETTERS TO THE EDITOR

Medical Students as Voting Members

This is a correction of a relatively minor error in the January Annals but one which, if not pointed out now, might give me a reputation for foolishness as well as eccentricity. I did not at the Annual Business Meeting make a motion "that medical students become voting members of the Society." I had understood Mr. Mikos of Howard to have proposed that each local medical school have a voting representative in the Society so that medical students could get a grasp of how the Society works and so that the Society might benefit from the perspective of youth. This seemed to me to be so reasonable a proposal—and so modest in comparison to the demands which students have made of other institutions—that I moved it be accepted forthwith. I had no intention of suggesting that *all* medical students be eligible for membership—the Society's parking lot fills up too rapidly as it is.

M. J. Halberstam, M.D.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Patients Needed for Clinical Center Studies

Ewing's Sarcoma: The coöperation of physicians is requested in the referral of patients with Ewing's sarcoma for a continuing study being conducted by the Radiation Branch of the National Cancer Institute at the Clinical Center of the National Institutes of Health in Bethesda, Md.

Patients who have received no treatment are preferred, but selected patients with previous therapy will also be accepted for admission as inpatients. Upon completion of their studies, patients will be returned to the care of the referring physician, who will receive a summary of findings.

Physicians interested in having their patients considered for admission to this study may write or telephone Dr. Ralph E. Johnson, Clinical Center, Room B1B-41B, National Institutes of Health, Bethesda, Md. 20014; telephone: (301) 496-5457.

Chronic Mucocutaneous Moniliasis: The coöperation of physicians is also requested in the referral of patients with chronic mucocutaneous moniliasis for a study being conducted by the National Institute of Allergy and Infectious Diseases at the Clinical Center.

Patients will be admitted for immunological and endocrinological studies directed at determining the mechanisms of chronicity of the infection and more successful programs for treatment of the disease. Patients of any age or sex will be considered. The length of stay will be approximately 4 to 6 weeks.

On completion of their studies patients will be returned to the care of the referring physician, who will receive a summary of findings.

Physicians interested in having their patients considered for admission to this study may write or telephone Dr. Charles H. Kirkpatrick or Dr. Robert R. Rich, Clinical Center, Room 11B–13, National Institutes of Health, Bethesda, Md. 20014; telephone: (301) 496-4963.

Recommended Motor Vehicle Restraining Devices for Children

The American Academy of Pediatrics, in a news release of January 27, 1970, states: "If more children had been required to use properly-designed restraining devices, many of the 5,900 children under 15 years of age who died in motor vehicle accidents in 1969 would have lived."

The following restraining devices are recommended for children according to their specific weight categories[1]:

Children from birth to 12 pounds should be transported in a rear-seat bassinet or car bed held in place by front and rear-seat safety belts. The bassinet should be parallel to the long axis of the car, with the infant in a feet-forward position. A properly constructed infant carrier may be used in the front seat of a car for children in this weight category in lieu of a rear-seat bassinet.

Children from 12 to 24 pounds should be placed in a properly constructed rear-seat safety harness or toddler seat.

Children from 25 to 50 pounds should be placed in a good safety child-seat. At present the shield-type seat design affords superior protection, though it has the major psychological disadvantage of limiting the child's field of vision.

Children weighing more than 50 pounds should use the adult lap belt and, when their height exceeds 55 inches, the adult shoulder harness should also be used.

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[1] Burg, F. D., Douglass, J. M., Diamond, E., and Siegel, A. W.: Pediatrics, January 1970.

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PRECAUTIONS: *Persons who have become drowsy on this or other antihistamine-containing drugs, or whose tolerance is not known, should not drive vehicles or engage in other activities requiring keen response while using this preparation. Hypnotics, sedatives, or tranquilizers if used with* BENYLIN EXPECTORANT *should be prescribed with caution because of possible additive effect. Diphenhydramine has an atropine-like action which should be considered when prescribing* BENYLIN EXPECTORANT.
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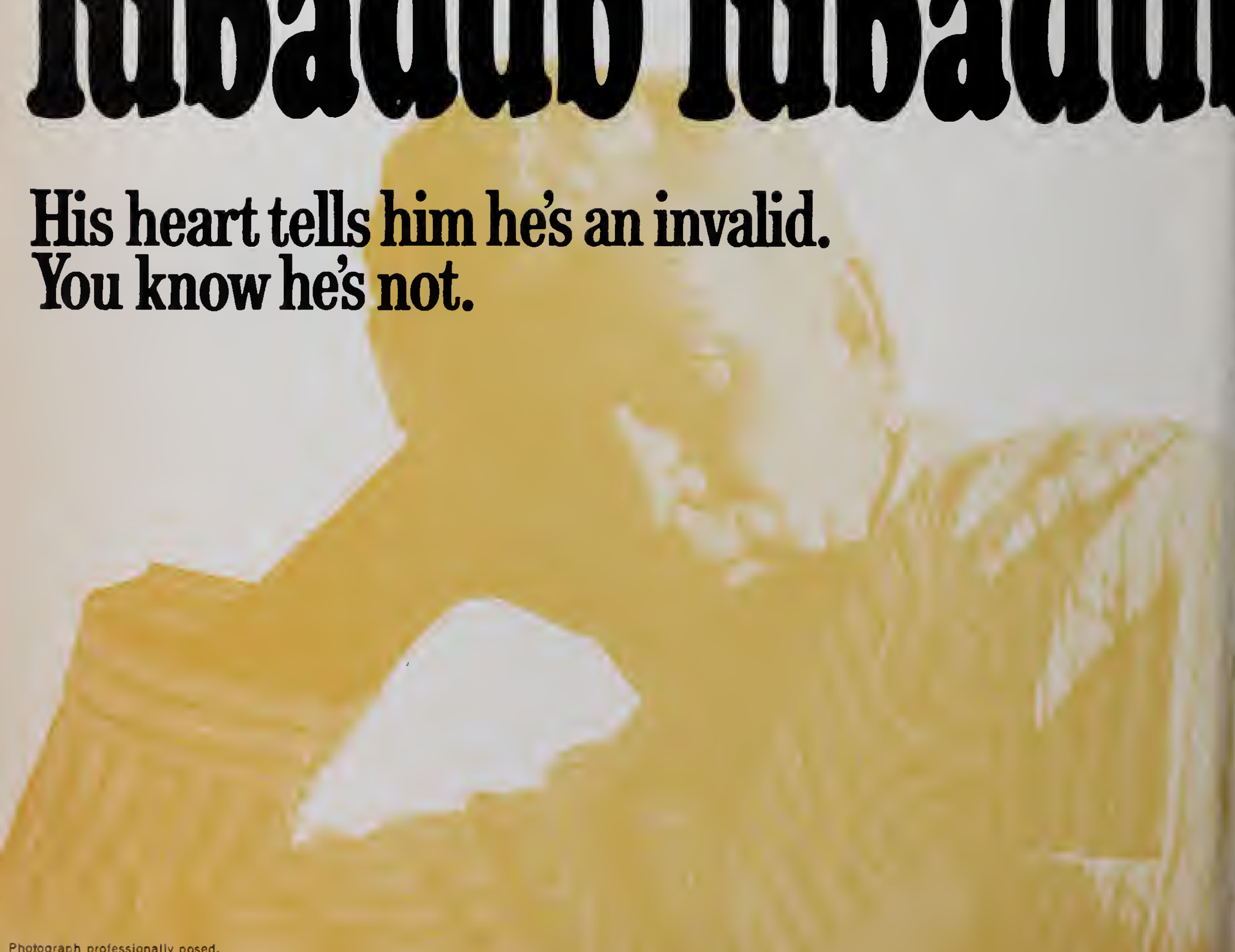

Photograph professionally posed.

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iety is expected in the cardiovascular patient.
tle may even be desirable.

when anxiety is exaggerated . . . when it
rferes with sleep . . . when it aggravates
iovascular symptoms, your help may
eeded.

urally, you'll want to reassure the patient.

perhaps prescribe Equanil (meprobamate)
djunctive therapy. It helps relieve anxiety
tension specifically, yet gently.

ost 15 years' use has shown that Equanil
ually well tolerated as well as effective.
effects are generally limited to transient
vsiness; serious, therapy-interrupting
effects are rare.

Contraindications: History of sensitivity to meprobamate.

Important Precautions: Carefully supervise dose and amounts prescribed, especially for patients prone to overdose themselves. Excessive prolonged use has been reported to result in dependence or habituation in susceptible persons, as alcoholics, ex-addicts, and other severe psychoneurotics. After prolonged excessive dosage, reduce dosage gradually to avoid possibly severe withdrawal reactions. Abrupt discontinuance of excessive doses has sometimes resulted in epileptiform seizures.

Warn patients of possible reduced alcohol tolerance, with resultant slowing of reaction time and impairment of judgment and coordination.

Reduce dose if drowsiness, ataxia or visual disturbance occurs; if persistent, patients should not operate vehicles or dangerous machinery.

Side Effects include drowsiness, usually transient; if persistent and associated with ataxia, usually responds to dose reduction; occasionally concomitant CNS stimulants (amphetamine, mephentermine sulfate) are desirable. Allergic or idiosyncratic reactions are rare, but such reactions, sometimes severe, can develop in patients receiving only 1 to 4 doses who have had no previous contact with meprobamate. Previous history of allergy may or may not be related to incidence of reactions. Mild reactions are characterized by itchy urticarial or erythematous maculopapular rash, generalized or confined to groin. Acute nonthrombocytopenic purpura with cutaneous petechiae, ecchymoses, peripheral edema and fever have been reported. One fatal case of bullous dermatitis following intermittent use of meprobamate with prednisolone has been reported. If allergic reaction occurs, meprobamate should be stopped and not reinstituted. Severe reactions, observed very rarely, include angioneurotic edema, bronchial spasms, fever, fainting spells, hypotensive crises (1 fatal case), anaphylaxis, stomatitis and proctitis (1 case) and hyperthermia. Treat symptomatically as with epinephrine, antihistamine and possibly hydrocortisone. Aplastic anemia (1 fatal case), thrombocytopenic purpura, agranulocytosis and hemolytic anemia have occurred rarely, almost always in presence of known toxic agents. A few cases of leukopenia, usually transient, have been reported on continuous administration.

Meprobamate may sometimes precipitate grand mal attacks in patients susceptible to both grand and petit mal. Extremely large doses can produce rhythmic fast activity in the cortical pattern. Impairment of accommodation and visual acuity has been reported rarely. After excessive dosage for weeks or months, withdraw gradually (1 or 2 weeks) to avoid recurrence of pretreatment symptoms (insomnia, severe anxiety, anorexia). Abrupt discontinuance of excessive doses has sometimes resulted in vomiting, ataxia, tremors, muscle twitching and epileptiform seizures. Prescribe very cautiously and in small amounts for patients with suicidal tendencies. Suicidal attempts have resulted in coma, shock, vasomotor and respiratory collapse and anuria. Excessive doses have resulted in prompt sleep; reduction of blood pressure, pulse and respiratory rates to basal levels; and occasionally hyperventilation. Treat with immediate gastric lavage and appropriate symptomatic therapy. (CNS stimulants and pressor amines as indicated.) Doses above 2400 mg./day are not recommended.

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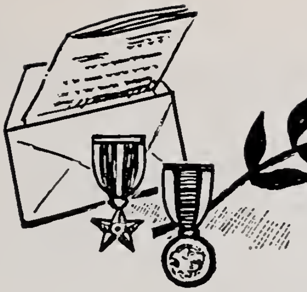

News & Personals

Summary of Executive Board Actions

Proceedings of January 26 Meeting

Dinner for the Board members was served in the Exhibit Hall of the Medical Society. Dr. Robert J. Coffey presided at his first meeting as Chairman of the Board, which was attended by Drs. Frank S. Pellegrini, Marvin C. Korengold, Howard Katzman, James E. Boland, Henry D. Ecker, William S. McCune, Frank S. Bacon, John J. Hughes, C. Willard Camalier, Jr., and Mr. Thomas Sadler, Secretary. Present by invitation was Dr. Arthur E. Wentz, Coördinator for the Regional Medical Program. The meeting was called to order at 7:20 p.m. by the Chairman.

The minutes of the December 15, 1969 meeting were approved as read with the inclusion of the following amendment: That the Board of Credentials be chaired in 1970 by Dr. Edward E. Ferguson, with Dr. Eugene A. Clark as Vice Chairman.

Committee Meetings: The Secretary reported the following committees had met since the last meeting of the Board:

December	16	Grievance Committee
	17	Legislative Committee
	18	Membership Committee
	19	Liaison Committee with Allied Professions
	22	Ad Hoc Committee on Abortions
	23	Committee on Ruffin and Other Bequest Funds
January	5	Ad Hoc Committee on Abortions
	6	Committee on Public Information and Education
	7	Committee on Smoking and Health
	8	Physician Placement Committee
	9	Utilization Committee
	12	Ad Hoc Committee on Abortions
	13	Board of Credentials
	14	Fee Review Committee
	15	Breast Cancer Study Committee
	19	Program Committee, Scientific Assembly
	19	Ad Hoc Committee on Abortions
	20	Grievance Committee
	20	Committee on Blood Banks
	21	Legislative Committee
	22	Committee on Communicable Diseases
	26	Committee on Environmental Health
	26	Ad Hoc Committee on Abortions
	26	Committee on Public Welfare

Forty-sixth Kober Lecture

Gorman Auditorium
Georgetown University Hospital

Wednesday, April 22, 1970—8 p.m.

SPEAKER:
Robert A. Good, M.D.
Professor of Microbiology,
University of Minnesota

Selected by the Council of the
Association of American Physicians

SUBJECT:
"Frontiers in Immunology"

ADMISSION FREE

Members and guests of the Medical Society of
the District of Columbia are cordially
invited to attend.

Board of Credentials: On recommendation of the Board of Credentials, 16 applicants were elected to Active membership, 3 to Associate membership, and 1 to Resident-Intern membership. Their names appear on page 170. Approval was given to the following changes in membership status:

Transfers

Active to Associate: John L. Chamberlain, Perry Hookman, Virginia Ling, Louis H. Shuman, and John A. Washington

Associate to Active: Roberta Ann Irish

Resignations

Active: David M. French, Harold Margulies, Ian Douglas McLaren, Hilary E. C. Millar, and Lutgardo Granda Paulilio

Associate: Margaret E. Callan, M. Nick Chehreh, Arthur J. Linden, Peter C. Luchsinger, Iradj Mahdavi, Richard I. Mazze, Kenneth M. Moser, Glen Pincock, W. Suit Ritchie, T. Frasier Williams, and Yilmaz Yamaner

Regional Medical Program: Dr. Wentz presented his report on RMP activities. At the request of the Secretary he clarified for the Board the proposed contract between RMP and the Health Facilities Planning Council. The report was accepted for information.

Consulting Editor to Medical Annals: The Board approved the recommendation of Dr. Wallace M. Yater, Editor of the ANNALS, that Colonel Raymond W. Blohm, MC, USA, succeed Colonel Robert H. Moser as Consulting Editor, representing the Walter Reed Army Medical Center. Colonel Moser, who served as Chief of the Department of Medicine at Walter Reed, has been succeeded in that post by Colonel Blohm.

Student AMA: Dr. Pellegrini reported on a recent meeting he called which was attended by 3 SAMA representatives and Drs. Korengold and Hughes. In response to the request of these students for recognition and participation in Medical Society affairs, he made 3 recommendations for consideration by the Board. After a period of discussion, there was general agreement that the Society should offer SAMA members Society membership and participation in committee meetings. The following procedure was outlined: (1) the Committee on Constitution and By-laws consider the establishment of a Student membership; (2) with consultation of Council officers, Student AMA members be invited to Annual and Special meetings of the Medical Society with permission to discuss issues but without vote; and (3) with consultation of Council officers Student AMA members be appointed to Society committees with permission to discuss issues and to vote, on the same basis as any other member.

In response to a request from the 3 SAMA Chapters in D. C., a motion was made and carried that, as in the past, financial assistance be granted them for sending representatives to their national meetings.

TV-Press Dinner: As recommended by the Committee on Public Information and Education, approval was given to a TV-Press dinner on April 14, 1970 at the Madison Hotel with the agenda for the dinner to be developed by Dr. Pellegrini and Dr. Warren D. Brill, Chairman of the Committee.

Report of AMA Delegates: The formal report of the Society's delegates to the AMA Clinical Convention in Denver, November 30–December 3, 1969, had been reviewed by the Board members prior to the meeting. At the request of the Chairman, Dr. Hughes cited highlights from the report, especially the recommendation of the Board of Trustees regarding Planning and Development (the Himler Report). Dr. Pellegrini requested that copies of this report be sent to each committee chairman for review, consideration, and recommendation covering the specific areas pertinent to his committee.

Committee on Liaison with the Allied Professions: The Board approved the recommendation of this Committee that the D. C. Association of Medical Assistants have a booth at the 1970 Assembly manned by members and that the Association be given space in the monthly *News* for appropriate items.

It was decided to refer to the Program Committee the recommendation to schedule a seminar on nutrition or that it be included in the 1970 Assembly.

Other Business

1. Dr. Pellegrini reported that the City Council's Health and Welfare Committee had held public hearings on January 20, 21, 26 and 28. He briefly reviewed the discussion at these hearings, which pertained to health care for the poor, improved emergency medical health care, opening D. C. General Hospital to private physicians, a proposal for Blue Cross/Blue Shield to underwrite and administer the D. C. Medicaid program, etc. In regard to the last, a motion was made and carried that the Medical Society of the District of Columbia favors Blue Cross/Blue Shield taking over the administration of the District's Medicaid program.

Representatives of the Society at the hearings were Drs. Pellegrini, Jack Kleh, Thomas M. Arnett, and Harry Zehner, Jr.

2. There was discussion of a letter from a member in which he complained of the use of bold-face type in telephone books by some physicians and clinics. The letter had been referred to the Grievance Committee for its consideration. The Board accepted the unanimous opinion of the Grievance Committee that bold-face type constitutes undignified advertising and is, therefore, un-

ethical. It was decided that this matter be brought to the attention of the Society's membership in the *News* with a statement that the names of the offenders will be brought to the attention of the Committee on Ethics, and, further, that a letter be directed to all offenders.

It was suggested by the Board that the matter of bold-face type in the telephone listing of physicians be taken to the Medical Council of the Metropolitan Washington Area to determine whether a uniform policy can be agreed upon among neighboring societies.

3. The Secretary informed the Board that Dr. Yater, Editor of the ANNALS, is receptive to a special issue of the ANNALS to note the centennial anniversary of the founding of Children's Hospital of D. C.

4. A motion was made and carried to accept the recommendation of the Committee on Environmental Health to approve the proposed District of Columbia radiation regulations.

5. At the request of Dr. Pellegrini, Dr. Camalier stated he would testify in behalf of the Medical Society on the proposed D. C. Anatomical Gift Act, as requested by Senator Tydings. (The Medical Society endorsed the proposed bill in August 1969.)

There being no further business, the meeting was adjourned at 9:05 p.m.

MEETINGS

The 172nd Annual Meeting of the Medical and Chirurgical Faculty of Maryland will convene at The Alcazar, Baltimore, April 1, 2 and 3. The Program Committee has arranged an outstanding scientific program with many prominent lecturers, as well as medical and surgical grand rounds. The annual Round Table Luncheon will include discussions on varied subjects of interest to all physicians, and there will be several social functions for physicians and their wives. There is no registration fee; 12 hours' credit will be given by the Academy of General Practice for attendance. A detailed program and reservation forms will be mailed upon request to Dr. DeWitt E. DeLawter, Chairman of the Committee on Program and Arrangements, Medical and Chirurgical Faculty, 1211 Cathedral Street, Baltimore, Md. 21201.

The 13th Annual Joint Cardiac Symposium, sponsored by the Washington Heart Association and the Heart Association of Northern Virginia, Inc., will be held, Wednesday, April 8, in the Persian Room at the Marriott Twin Bridges Motor Hotel on U. S. 1, Washington, D. C. (Virginia side).

The United States Pharmacopeial Convention will hold its decennial meeting, April 8–10, at the Shoreham Hotel in Washington. On April 9 a special program will be presented honoring the 150th anniversary of the founding of the U. S. Pharmacopeia.

The Children's Hospital of the District of Columbia will conduct its annual **Postgraduate Course in Pediatrics** on Friday and Saturday, April 10 and 11.

The Spring Session of the American Academy of Pediatrics will convene at the Washington Hilton Hotel on April 13, 14 and 15 in conjunction with the Centennial of Children's Hospital. More than 3,000 persons, including pediatricians, their families and guests, are expected to attend this meeting, which will feature scientific and technical exhibits and informative Round Table discussions on such subjects as chronic diseases, eye problems, adolescence, new drugs, legislation, asthma, blood disorders, neonatology, and genetic counseling.

Special activities will include an all-day conference on pediatric nursing, Sunday, April 12, and an open meeting of the Academy's Head Start Medical Consultation Service at 8:00 p.m. on Monday, April 13. In addition, a special seminar, entitled "Fundamental Education, a Developmental Model," is scheduled for 10:00 a.m. to 1:00 p.m. on April 12. Also an open meeting, this seminar will be co-sponsored by the AAP, the Baltimore-D.C. Psychoanalytic Institute, and the 100th Anniversary Committee of Children's Hospital of D. C.

For further information write: Public Relations, Children's Hospital of D. C., 2125 13th Street, N.W., Washington, D. C. 20009.

A Postgraduate Course on "The Diagnostic Evaluation of Children with Learning Problems: A Systems Approach" will be held at the Washington Hilton Hotel, June 3–5, under the auspices of the Department of Neurology of the Children's Hospital of the District of Columbia and the George Washington University School of Medicine. Registration will be limited. For information write to Dr. Mark N. Ozer, Director, Learning Research Unit, 2125 13th Street, N.W., Washington, D. C. 20009.

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GENERAL NEWS

The Clinical Cancer Training Committee of Georgetown University School of Medicine is sponsoring a **Practitioner-Trainee Fellowship Program.** This program, supported by a grant from the National Institutes of Health, is intended for education and training in the field of clinical cancer. As part of the program the Committee has developed a 1-month practitioner-traineeship for physicians in the community who wish to return and update their knowledge of the management of patients with malignant disease.

These fellowships are available in the fields of radiotherapy, cancer chemotherapy, nuclear medicine, and surgical oncology. A special program may be arranged for another field of cancer if there is interest.

A stipend of $1,500 will be paid to each Fellow upon completion of his month of training. The Program does not pay for travel expenses incurred by trainees.

Applicants should send a formal letter to the Program Office indicating the particular fellowship in which he is interested, the reason for the interest, availability schedule, and a copy of his or her "curriculum vitae." The Program Office is located at D. C. General Hospital, 19th and Massachusetts Avenue, S.E., Box 309, Washington, D. C. 20003.

The Program Directors are Dr. J. Robert Andrews and Dr. Bruce I. Shnider, with an Advisory Committee of Drs. Robert J. Coffey, Abner Golden, and John F. Potter.

Dr. Thomas E. Piemme, formerly Assistant Professor of Medicine at the University of Pittsburgh and Director of the Medical Clinics, is **heading the new Division of General Medicine at George Washington University.** This Division of General Medicine has long-range plans for the delivery of total health care services to a defined geographical community, with a population of approximately 35,000, providing the spectrum of prevention, ambulatory services, inpatient services, rehabilitation, and long-term care. Through a Special Improvement Grant from the National Institutes of Health, the Division is budgeted for 8 full-time faculty members and support personnel.

Dr. Piemme is a 1958 graduate in medicine of the University of Pittsburgh. He also attended the Massachusetts Institute of Technology and the Graduate School of Electrical Engineering at Ohio State University. He has authored a number of articles in the fields of cardiovascular and environmental studies in medicine.

Copies of **"Exfoliative Cytology,"** a 33-page booklet on techniques for clinical cytopathology, prepared by Gary W. Gill, Chief Research Associate of the Cytopathology Division of Johns Hopkins University School of Medicine, may be obtained without charge from Millipore Corporation, Bedford, Mass. 01730.

The booklet contains detailed information on the collection and preparation of cytopathological specimens of cerebrospinal fluid, sputum, body cavity fluids, urine, peripheral blood and cells exfoliated from esophageal lesions or the gastric mucosa. It includes instruction on fixation, staining, mounting and microscopy, plus a bibliography of selected references on exfoliative cytology.

PERSONALS

Dr. Lawrence A. Pyle, Jr., was appointed General Medical Director of The Chesapeake and Potomac Telephone Companies, effective January 1. He succeeds **Dr. R. Lomax Wells,** who has retired.

In his new post Dr. Pyle will be responsible for administering health programs for C & P employees in Washington, Maryland, Virginia and West Virginia. His earliest affiliation with C & P dates back to 1948 when he was named Examining Physician. Recently he has served as Medical Director for the Washington Company.

Dr. Pyle received his medical degree from Duke University in 1939. He is Assistant Clinical Professor of Epidemiology and Environmental Health at George Washington University School of Medicine, and currently he is President of the National Capital Occupational Medical Association.

Dr. Wells, who had been associated with C & P since 1934, was appointed Medical Director in 1947. He is immediate Past Chairman of the AMA Council on Occupational Health and serves on the President's Committee on Employment of the Handicapped.

Dr. Frances Cress Welsing, Assistant Professor of Pediatrics (Psychiatry), at Howard University College of Medicine, has established

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the Cress-Griffin Fund at Howard in honor of her parents, Dr. and Mrs. Henry N. Cress, and an uncle, Mr. Charles S. Griffin. Dr. Welsing made an initial contribution of $1,000 in December 1969 and is planning to add $1,000 annually to the Fund, which will be used to help medical students who are in need of financial assistance.

Dr. John P. Adams, Professor and Chairman of the Department of Orthopedic Surgery at George Washington University School of Medicine, was named President-elect of the American Society for Surgery of the Hand at the Society's 25th Annual Meeting in Chicago, January 16–17. He has been serving as Vice President of the Society.

Dr. Edward D. Freis, Senior Medical Officer at Veterans Administration Hospital, Washington, was among the 10 scientists nominated by leaders in the medical profession to receive the Distinguished Achievement Award of *Modern Medicine* for 1970. Cited for his research and effective treatment of high blood pressure, Dr. Freis received national recognition in the January 12 issue of *Modern Medicine.*

Dr. Freis received his medical degree from Columbia University in 1940. He is Professor of Medicine at Georgetown University and Chief of its Cardiovascular Research Laboratory. He is an Associate member of the D. C. Medical Society.

Dr. Edward W. Nicklas was elected Chairman of the Board of the Health Facilities Planning Council of D. C. at the Council's annual meeting in December. Dr. Nicklas, who is Past President of the Medical Society of the District of Columbia, has been a member of the Board of Directors of the Planning Council since 1966.

Dr. Morris Feitel, of Laurel, Md., has been elected Chairman of the Medical Staff of Children's Hospital. He is an Associate member of the D. C. Medical Society. Elected to serve with him were **Dr. Marshall M. Parks,** Vice Chairman, and **Dr. Beale H. Ong,** Secretary-Treasurer. They assumed their duties, January 1.

Dr. Feitel, an alumnus of George Washington University School of Medicine, is Clinical Associate Professor of Pediatrics at Georgetown University School of Medicine and senior attending physician at Children's. Dr. Parks, who is Clinical Professor of Ophthalmology at George Washington University, has served as Chairman of the Department of Ophthalmology at Children's Hospital for 3 years. Dr. Ong, Clinical Instructor in Pediatrics at George Washington University, is senior attending pediatrician at Children's.

Dr. Frank J. Sanzaro will serve during 1970 as President-elect of the Providence Hospital Medical Staff. On January 1, 1971, he will succeed Dr. John A. Long as President of the staff for a 2-year period.

Dr. Stanley M. Sinkford, Associate Professor of Pediatrics, and **Dr. Frances C. Welsing,** Assistant Professor of Pediatrics (Psychiatry), both of Howard University College of Medicine, participated in the medical and dental examinations of approximately 1,000 children from a Head Start Program centered in the town of Batesville, Miss., December 27–31. In addition to the physicians, the examining team consisted of dentists, medical and dental students, X-ray and laboratory technicians, and clerical workers. The contract to examine the children of this community was a part of the Howard University Mississippi Project being planned and organized by dental and medical students and faculty of Howard University.

Dr. W. Proctor Harvey, President of the American Heart Association and Director of the Division of Cardiology at Georgetown University Hospital, was featured in the January 16 issue of *Modern Medicine* under "Contemporaries," a series of profiles of leading physicians. Dr. Harvey was also honored in the February issue of the MEDICAL ANNALS, which was the Georgetown University Medical Center Number dedicated to Dr. Harvey.

OBITUARIES

Daniel LeRay Borden, M.D.

(1887–1969)

Aside from the eminence he attained in his chosen profession, Dr. Daniel LeRay Borden possessed sterling qualities which endeared him to his close friends and won for him the respect of acquaintances within and outside the medical profession.

His outstanding characteristic was an unwavering loyalty to his family and his intimates. The latter may not have always been worthy of it, but that made no difference; an allegiance once made was kept. Another characteristic was unassailable integrity. There was no excuse, in his opinion, to yield to expediency. He was also a proud man to whom family ties meant much. He spoke often of his family and the pride he had in the accomplishments of his sons.

Inherent in his make-up were an orderly mind and a devotion to duty. He would protest any suggestion of perfection, knowing only too well some of his personal idiosyncrasies. He and I often laughed about his aversion to social affairs where there is "small talk."

"Dan," as he was known to his intimates, was born on October 25, 1887, at Fort Douglas, Utah, where his father, then an Army surgeon, was stationed. His parents were Dr. William Cline and Jennie Adams Borden. His father was later to become Dean of the George Washington University School of Medicine (1908–1930). No son ever held his parents in greater esteem and affection than young Dr. Borden.

He received his early education in Washington public schools. His Doctor of Medicine degree (with distinction) was obtained at the George Washington University School of Medicine in 1912. In 1915 he received his Bachelor of Science degree from George Washington University and his M.A. from the same institution in 1916.

Dr. Borden had the distinction of having served in 3 American wars. Shortly following his graduation from medical school he became a Lieutenant in the United States Medical Reserve Corps, serving in the Mexican campaign in 1914. Later he saw service in World Wars I and II. At the time of his separation from the military service he was a full Colonel.

His teaching assignments at the George Washington University School of Medicine were: Assistant Surgeon, 1912–1914; Associate Professor of Surgery, 1914–1941; Clinical Professor of Surgery, 1941–1953; and Emeritus Professor of Surgery from 1953. He served on the Board of Trustees of George Washington University from 1956 to 1962.

Among his hospital appointments were: Attending Surgeon at the George Washington University Hospital, Doctors Hospital, and the old Emergency Hospital (1918–1945); Consulting Surgeon to Children's Hospital, Suburban Hospital, and Mt. Alto Veterans Hospital (1947–1952).

DANIEL LERAY BORDEN, M.D.
(From a 1940 Photo)

He held membership in the following professional societies: The Medical Society of the District of Columbia (member since 1913; President, 1940–41; Life member since 1954), American Medical Association, Southern Surgical Association, American College of Surgeons, American Board of Surgery (a founder and diplomate), Washington Academy of Surgery (a founder and President, 1938–39), Washington Academy of Medicine (a founder), Hippocrates-Galen Society, the George Washington University Medical Society (President, 1929–30), and the Smith-Reed-Russell Society. The George Washington University Medical Society conferred its Award of Merit on him in 1950, and in 1954 he received the Certificate for Meritorious Service from the D. C. Medical Society.

Dr. Borden was a member of the Chevy Chase and Metropolitan Clubs. He held membership in the Scottish Rite of Free Masonry and several fraternities.

My first meeting with Dr. Borden occurred upon my arrival in Washington in 1938. However, I did not get to know him well until he became President of the Medical Society. I recall vividly how astonished he was at his election. Once in office he gave it everything he had. What impressed me most at the time was his loyalty to the American Medical Association, the Medical Society, and the individual defendants during the historic antitrust trial in which the Department of Justice charged organized medicine with violating provisions of the Sherman Act. During the jury trial he sat with the defendants, although he was not one of them, for 8 grueling weeks. Surprisingly, he insisted to me on several occasions that the year he was President was one of the happiest of his life.

His principal hobby was sailing. He could hardly wait for the summer season when he could return to his home at Chaumont, N. Y. on Lake Ontario. In later years he reluctantly gave up yachting and acquired a cruiser.

Dr. Borden died, December 10, 1969, at his home, 20 Kalorama Circle, N.W. He is survived by his wife, the former Pauline Patterson Stone, and 2 sons, William Liscum Borden and Richard LeRay Borden. Another son, Charles Stone Borden, was killed in action in World War II.

Dr. Borden was a fine man and a true and loyal friend who will be missed by the many privileged to know him.

THEODORE WIPRUD

James Robert Gladden, M.D.

(1911–1969)

DR. J. ROBERT GLADDEN, Associate Clinical Professor of Orthopedic Surgery at Howard University College of Medicine, died, December 8, 1969, at his home, 1900 Tulip Street, N.W.

Dr. Gladden was born in Charlotte, N.C., October 29, 1911. He attended public schools in East St. Louis, Ill., and studied at Long Island (N. Y.) University. He graduated *magna cum laude* from Meharry Medical College in 1939 and interned the following year at Provident Hospital, Baltimore, Md. He also served a 2-year residency at Provident, 1940 to 1942, and continued his training in orthopedic surgery at Freedmen's Hospital, Washington, from 1942 to 1945.

Dr. Gladden was licensed to practice in the District of Columbia in 1944. After several years of private practice he became one of 3 Chiefs of Orthopedic Surgery at D. C. General Hospital, which combined the orthopedic residency training program of Georgetown, Howard and George Washington Universities.

Since 1946 he had been on the teaching faculty of Howard University, rising from Instructor to Assistant Professor and in 1964 to Associate Clinical Professor of Orthopedic Surgery. He was consultant to and senior attending orthopedic surgeon at Providence and Freedmen's Hospitals.

Dr. Gladden was the first Negro diplomate of the American Board of Orthopedic Surgery and the first Negro Fellow of the American Academy of Orthopedic Surgeons. He was a Fellow of the American College of Surgeons and Chairman of the Orthopedic Section of the National Medical Association. He was elected to Active membership in the Medical Society of the District of Columbia in 1953 and was a member of the American Medical Association. He was a director on the Board of Rogers Memorial Hospital, a member of the Board of the Metropolitan Police Boys Club, and was serving on the Mayor's Task Force on D. C. General Hospital.

His wife, Mrs. Grace Gross Gladden, survives him together with a son, J. Robert Gladden, Jr., both of Washington; a daughter, Mrs. Roger Rayford, of Adelphi, Md.; and 2 sisters, Mrs. Willette Childs, of Chicago, Ill., and Mrs. Mary Louise Perry, of East St. Louis, Ill.

Irving M. Rollins, M.D.

(1918–1969)

DR. IRVING M. ROLLINS, who was elected to Active membership in the Medical Society of the District of Columbia early in 1969, died, October 26, 1969, at his home, 7105 Devonshire Road, Alexandria, Va. As Medical Director of The Tobacco Institute in Washington, he was engaged in research on cancer and chest diseases. His offices were at 1776 K Street, N.W.

Dr. Rollins was born in New York City, March 28, 1918. He received his A.B. degree from the University of Pennsylvania in 1938 and graduated in medicine from New York Medical College in 1942. He interned the following year at Cumberland Hospital in Brooklyn and trained in surgery during military service with the Air Force, from 1943 to 1946. He continued his surgical training at

Coney Island Hospital, Brooklyn, from 1947 to 1949.

Dr. Rollins was in private practice for 12 years in Far Rockaway, New York, and 7 in Newark, New Jersey. In the latter city he was Director of the Department of Surgery at Newark City Hospital. During the riots in Newark he was the only physician to work round the clock for 2 or 3 days, and he received Nationwide recognition through television for this work.

Dr. Rollins was a diplomate of the American Board of Surgery and a Fellow of the American College of Surgeons, the International College of Surgeons, and the American College of Angiology. Just before his death he was scheduled to attend induction services for fellowship in the American College of Chest Physicians. He was examiner for the United States Section, International College of Surgeons, in 1965, and he had served for 3 years as Chairman of its Oral Examination Committee and for 2 years as Chairman of its Written Examination Committee. He was a member of the American Medical Association, the New York Academy of Science, and many other professional organizations. He had contributed to medical education through teaching appointments at New Jersey College of Medicine and New York Medical College and through scientific publications and exhibits.

He is survived by his wife, Mrs. Natalie Richelson Rollins, and 4 children, Craig, Joel, Phylis and Gary, now residing at 104–60 Queens Blvd., Forest Hills, N. Y.

Robert C. Rush, M.D.

(1916–1969)

Dr. Robert C. Rush, one of Washington's best known and beloved orthopedic surgeons, died suddenly, December 23, 1969, at Fairfax Hospital in Virginia.

Dr. Rush, a native of New Jersey, was born in Bayonne, April 18, 1916. He came to Washington in 1932 to attend Georgetown University, receiving his B.S. degree in 1936 and his medical degree in 1940, and he interned at Georgetown University Hospital the following year.

He was certified by the American Board of Medical Examiners in 1941, the same year he was licensed in the District of Columbia. After serving a residency in orthopedic surgery at Georgetown Hospital from 1941 to 1943, he entered private practice with Drs. Talbott, Larkin and Cobey. In 1955 he formed a separate partnership with Dr. Milton C. Cobey and continued in that relationship until his death.

Dr. Rush was Clinical Assistant Professor of Orthopedics at the Georgetown University Medical Center, having served on the faculty since 1943. He was attending surgeon at Georgetown and Children's Hospitals in D. C., Holy Cross Hospital in Silver Spring, Md., and Prince George's Hospital, Cheverly, Md. He was consulting surgeon to Suburban, Veterans Administration, and Columbia Hospitals.

In the 40's Dr. Rush was co-exhibitor with Dr. Cobey of a scientific exhibit on polio splints at the Medical Society's Annual Scientific Assembly, and several years later Drs. Rush, Cobey, Crain and Popovici exhibited an original piece of work, one of the earliest of its kind, on the use of plastic materials within human joints; it was entitled, "Ivalon Sponge Arthoplasty of Joints."

While Dr. Rush's competence extended over the entire field of his specialty, he was particularly adept at handling children with orthopedic problems. For many years he headed the orthopedic clinic at Children's Hospital. Children comprised so many of his private patients that he had special seats and toys for them in his reception room. These same attributes, combined with his truly genuine character, endeared Dr. Rush to his many professional and nonprofessional friends. Those who knew him intimately often said of him, "Nothing ever bothers Bob Rush."

Dr. Rush was elected an Active member of the Medical Society of the District of Columbia in 1944. He was a member of the American Medical Association and the Washington Orthopedic Club and member and Past President of both the Georgetown Clinical Society and the Georgetown University Medical Alumni Association. On a particularly memorable occasion, during the 1947 Scientific Assembly of the D. C. Medical Society, he arranged to have Bishop Fulton J. Sheen as guest speaker at the Georgetown Luncheon.

Dr. Rush, a devout Catholic, was a member of the Blessed Sacrament Parish, where he served as an usher for many years. He was a member of the John Carroll Society and the St. Luke's Guild.

He is survived by his wife, Margaret, and their children, Judy, Margaret, Robert, and Dooley, who reside at 5827 Utah Avenue, N.W.

All who knew Bob Rush could not help but love him. His professional skill was rendered with such kindness, consideration and humility that of him it could be truly said, "His life, his practice, and all his works were in imitation of Him the Great Physician."

Raymond A. Osbourn, M.D.

Therapeutic Abortion in D.C.—Connor and Aydinel

(Continued from page 137)

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Plethysmography and Carotid Compression—Sahebjami

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Shock in Myocardial Infarction—Cohn

(Continued from page 155)

7. Ventricular pacing. If shock and marked bradycardia coëxist, increase in ventricular rate via catheter electrode pacing is often of great clinical benefit.

Newer pharmacologic approaches such as the use of sympathetic blocking agents and other inotropic drugs, such as dopamine and glucagon, are still in the experimental stage.

Effective management of shock requires not only initiation of the correct therapy in the correct amounts but also close continuous monitoring of cardiovascular function. Adrenergic drugs should be weaned and discontinued as soon as possible. Blood volume may be inadequate after cardiac function is improved, and a falling CVP may be an indication for administration of dextran, even in patients who have manifested heart failure only a few hours before. If rhythm disturbances persist, electrical pacing through a transvenous pacemaker may help improve peripheral blood flow.

It is clear that intelligent use of the means currently available can be effective in salvaging many patients who would otherwise succumb to cardiogenic shock. In others, however, the impairment in cardiac performance is so severe that medical therapy is ineffective. In these, mechanical means of temporary circulatory support may eventually become an important adjunct to management.

Anasarca and Dyspnea—CPC

(Continued from page 159)

caseous pulmonary tuberculosis associated with secondary amyloidosis that was especially pronounced in the kidneys.

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Fibrocaseous tuberculosis of both lungs.
Amyloidosis of both kidneys.
Uremia (clinical).

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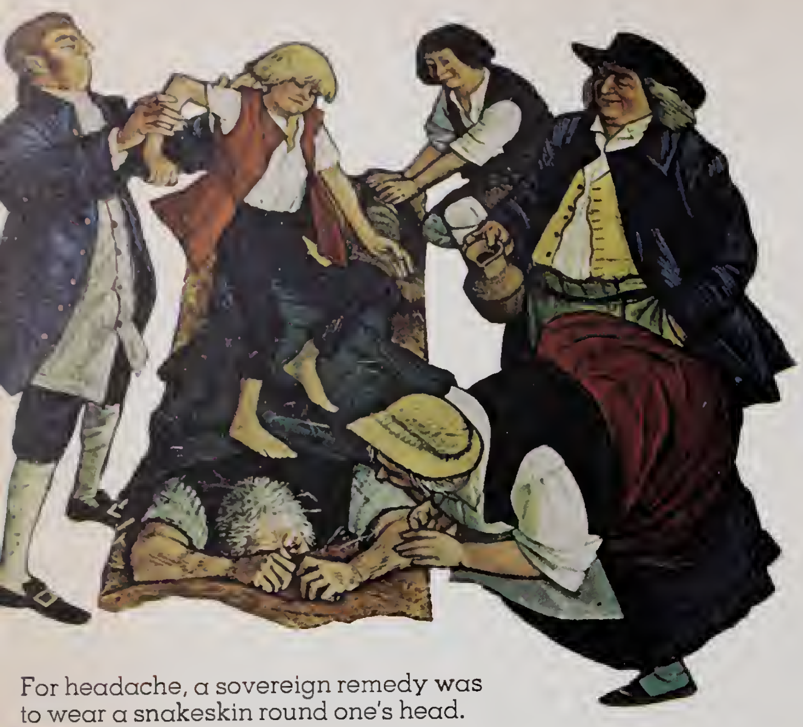

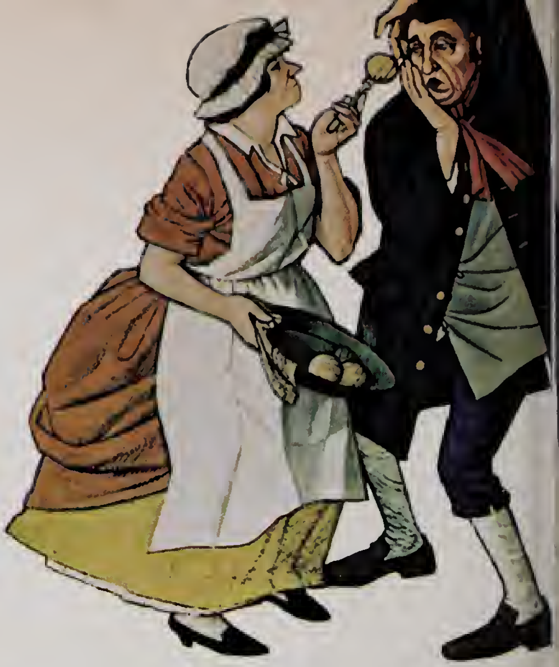

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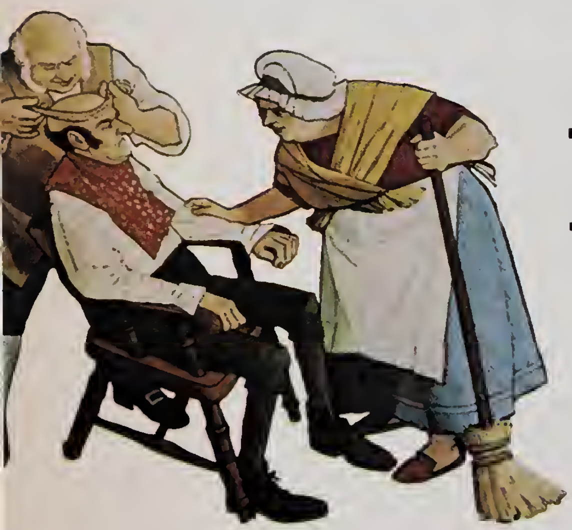

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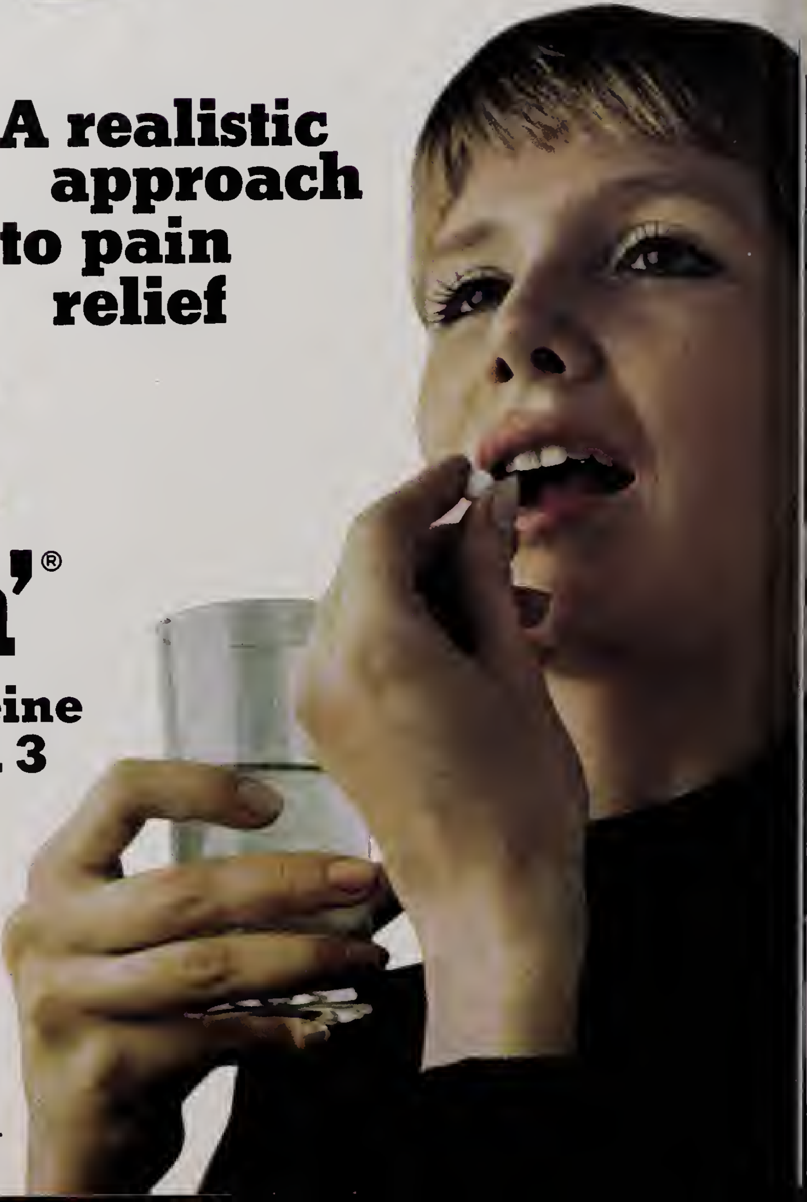

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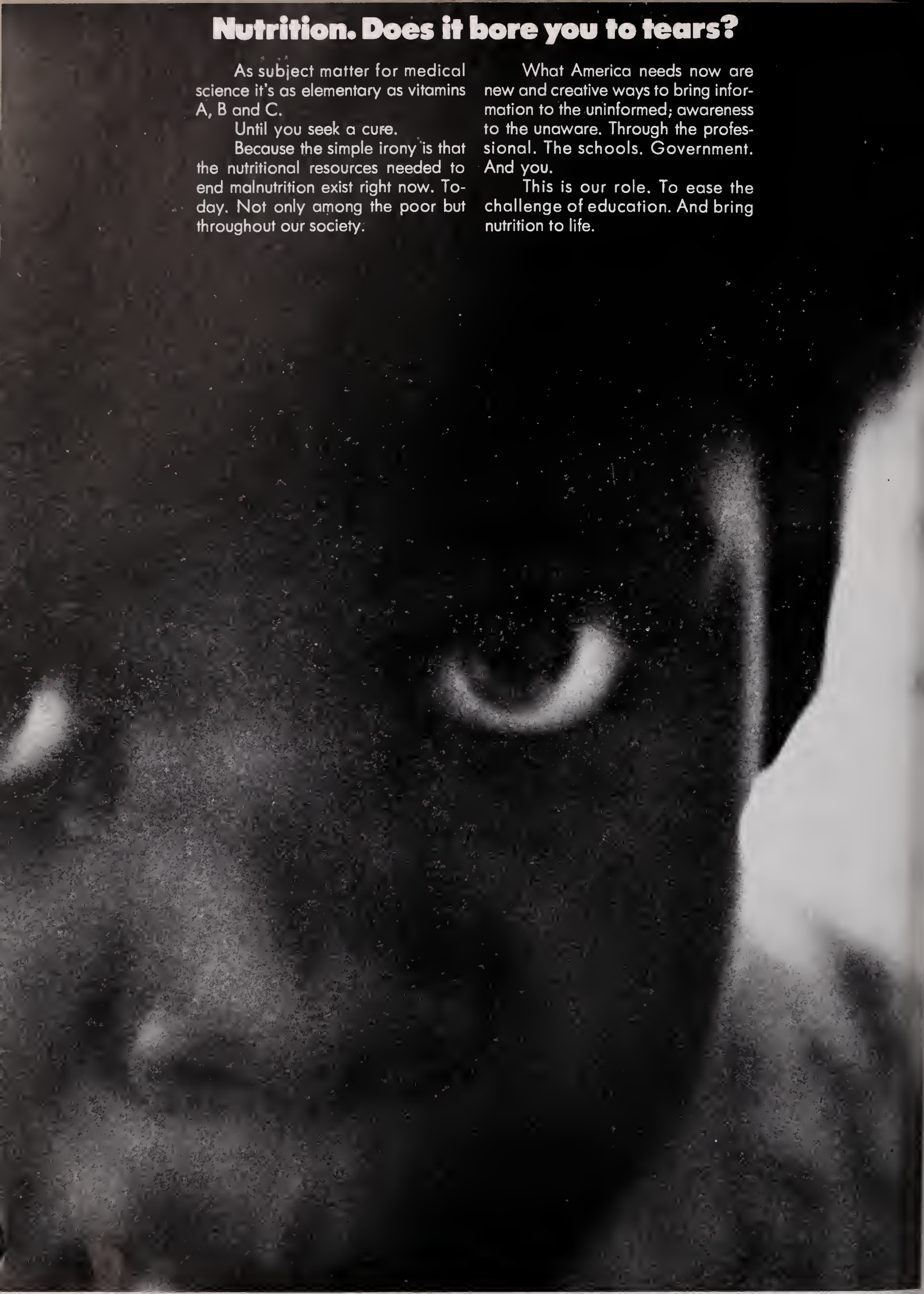

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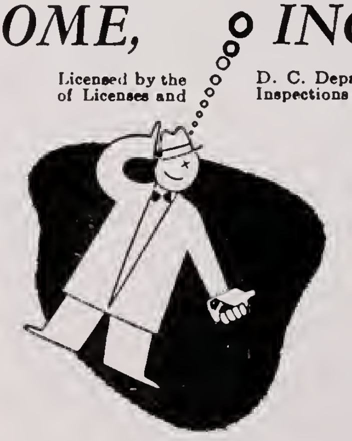

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April 10–12: American Society of Internal Medicine. Warwick Hotel, Philadelphia. Address: Mr. William R. Ramsey, Executive Director, Hearst Building, Third at Market Street, San Francisco, Calif. 94103.

April 12–17: 51st Annual Session of American College of Physicians. Bellevue-Stratford Hotel, Philadelphia. Address: Dr. Edward C. Rosenow, Jr., Executive Director, 4200 Pine Street, Philadelphia, Pa. 19104.

April 12–18: World Congress of Gynecology and Obstetrics and Annual Meeting of American College of Obstetrics and Gynecology. New York City. Address: Mr. Donald F. Richardson, Congress Coördinator, 79 West Monroe Street, Chicago, Ill. 60603.

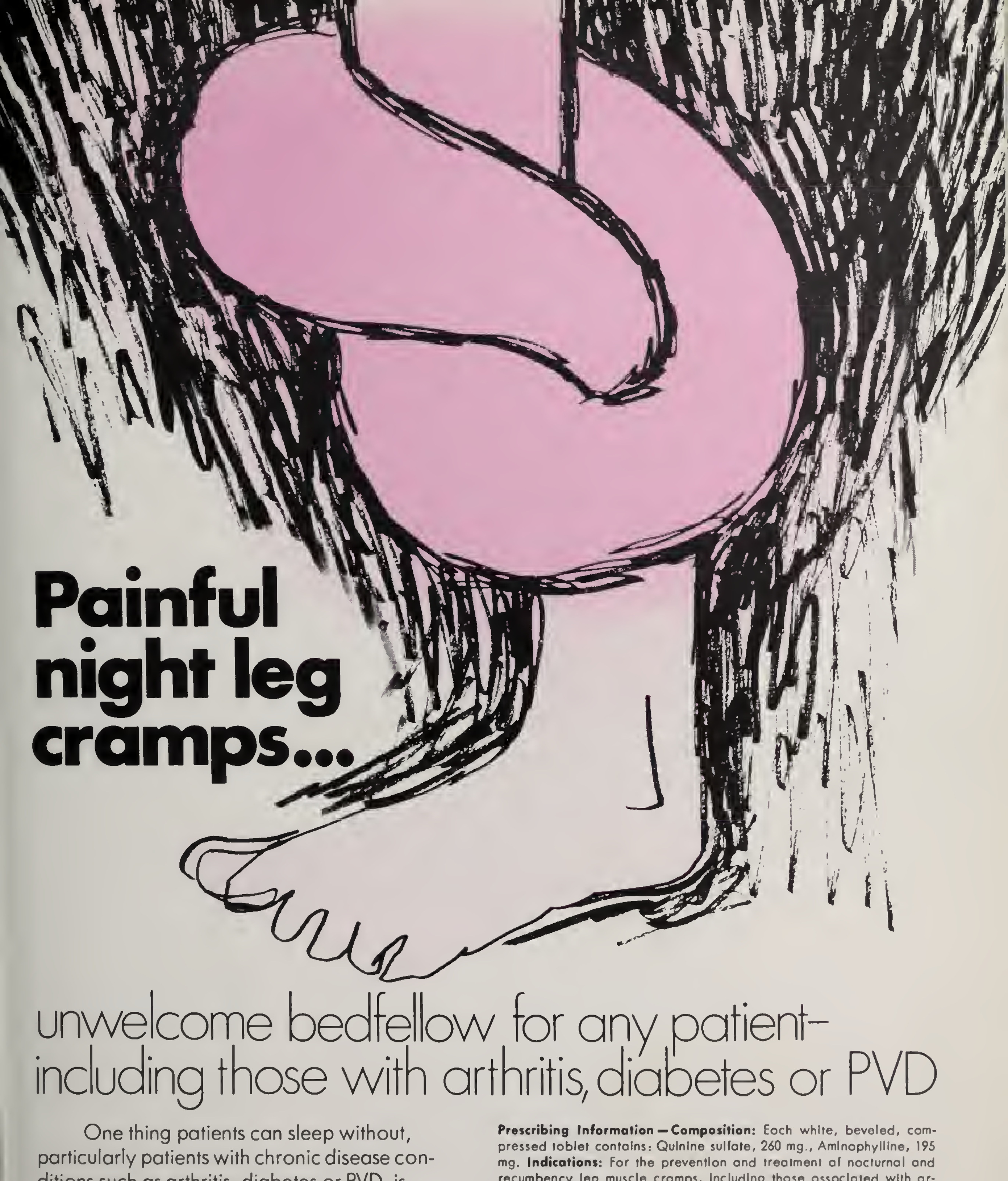
April 13–16: American Academy of Pediatrics. Washington Hilton Hotel, Washington. Address: Dr. Robert G. Frazier, Executive Director, 1801 Hinman Ave., Evanston, Ill. 60204.

April 19–23: American Association of Neurological Surgeons (founded as The Harvey Cushing Society). Shoreham Hotel, Washington. Address: Dr. William F. Meacham, Secretary, Vanderbilt University Hospital, Nashville, Tenn. 37203.

April 19–23: Southeastern Surgical Congress. Marriott Motor Hotel, Atlanta, Ga. Address: Dr. A. H. Letton, Secretary-Director, 340 Boulevard N.E., Atlanta, Ga. 30312.

April 27–29: American Surgical Association. The Greenbriar, White Sulphur Springs, W. Va. Address: Dr. G. Thomas Shires, Secretary, 5323 Harry Hines Blvd., Dallas, Texas 75235.

May 22–29: Tenth International Cancer Congress. Houston, Texas. Office of the Secretariat, Tenth International Cancer Congress, P.O. Box 20465, Astrodome Station, Houston, Texas 77025.



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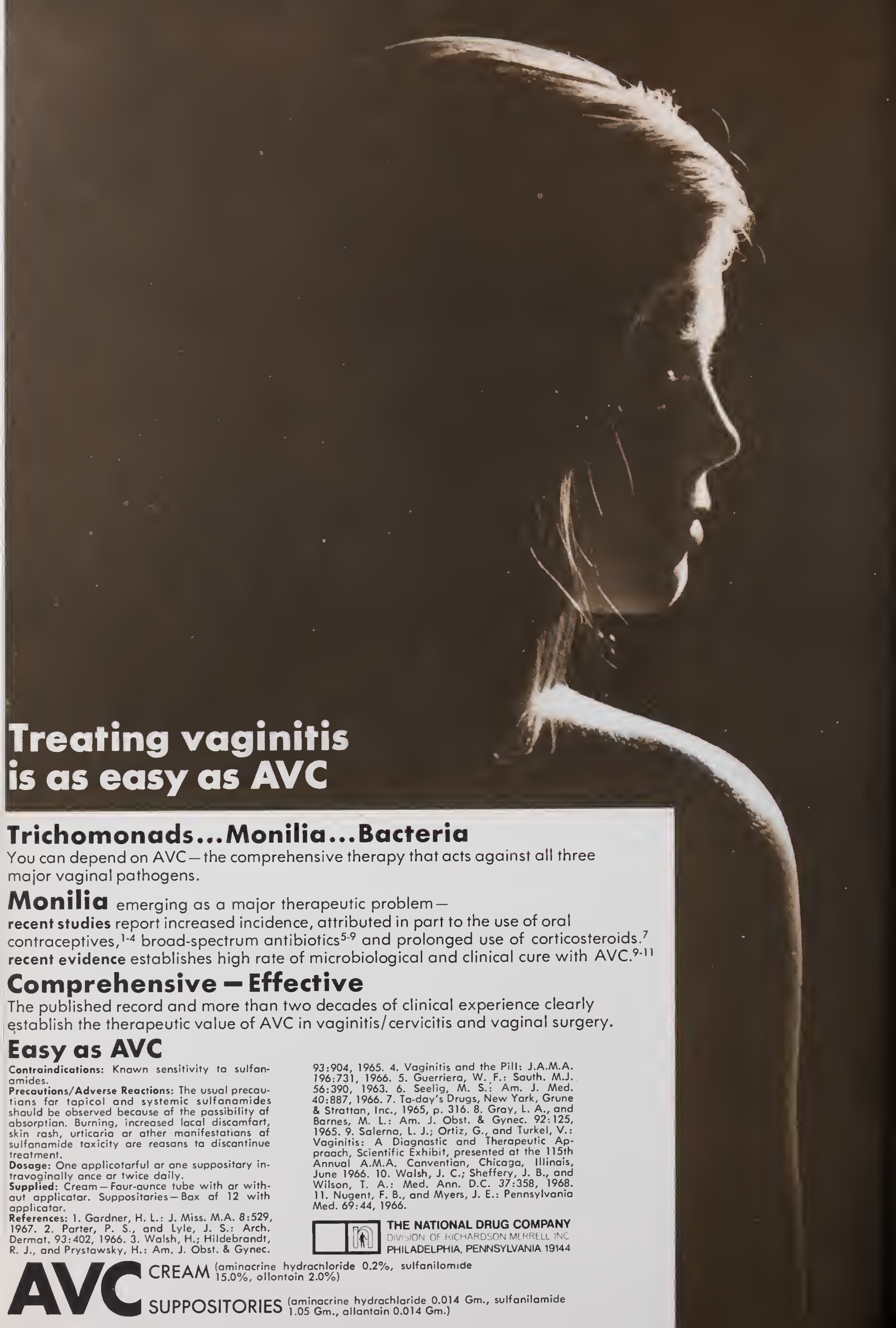

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References: 1. Gardner, H. L.: J. Miss. M.A. 8:529, 1967. 2. Porter, P. S., and Lyle, J. S.: Arch. Dermat. 93:402, 1966. 3. Walsh, H.; Hildebrandt, R. J., and Prystawsky, H.: Am. J. Obst. & Gynec. 93:904, 1965. 4. Vaginitis and the Pill: J.A.M.A. 196:731, 1966. 5. Guerriero, W. F.: South. M.J. 56:390, 1963. 6. Seelig, M. S.: Am. J. Med. 40:887, 1966. 7. To-day's Drugs, New York, Grune & Stratton, Inc., 1965, p. 316. 8. Gray, L. A., and Barnes, M. L.: Am. J. Obst. & Gynec. 92:125, 1965. 9. Salerno, L. J.; Ortiz, G., and Turkel, V.: Vaginitis: A Diagnostic and Therapeutic Approach, Scientific Exhibit, presented at the 115th Annual A.M.A. Convention, Chicago, Illinois, June 1966. 10. Walsh, J. C.; Sheffery, J. B., and Wilson, T. A.: Med. Ann. D.C. 37:358, 1968. 11. Nugent, F. B., and Myers, J. E.: Pennsylvania Med. 69:44, 1966.

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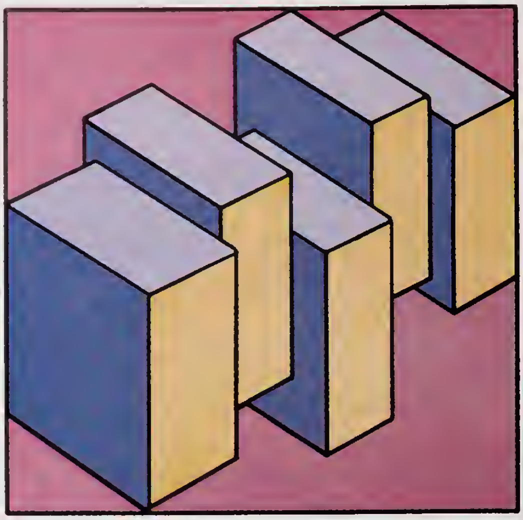

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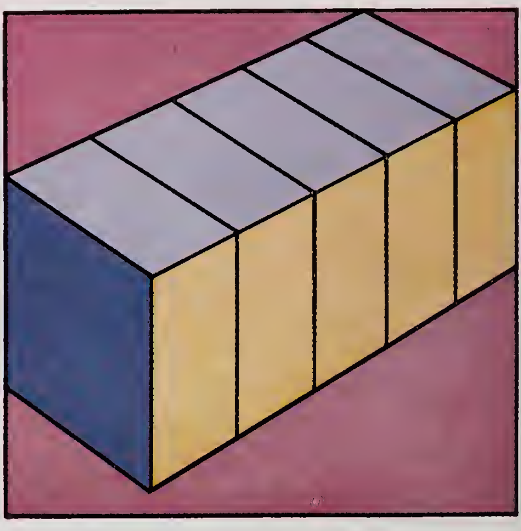

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HOWARD UNIVERSITY NUMBER

Staphylococcal Bacteremia in Heroin Addicts
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V. R. MODY, M.B.B.S.

Herpes Zoster in Children
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Growth and Nutritional Patterns
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Ovarian-Vein Thrombosis
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Pulmonary Lesions in Vietnam
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Etiological Aspects of Neonatal Jaundice
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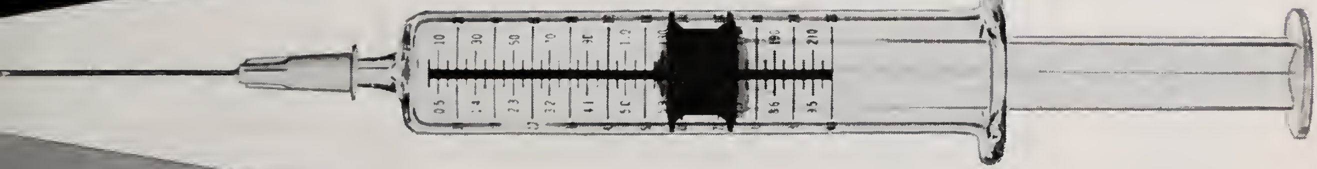

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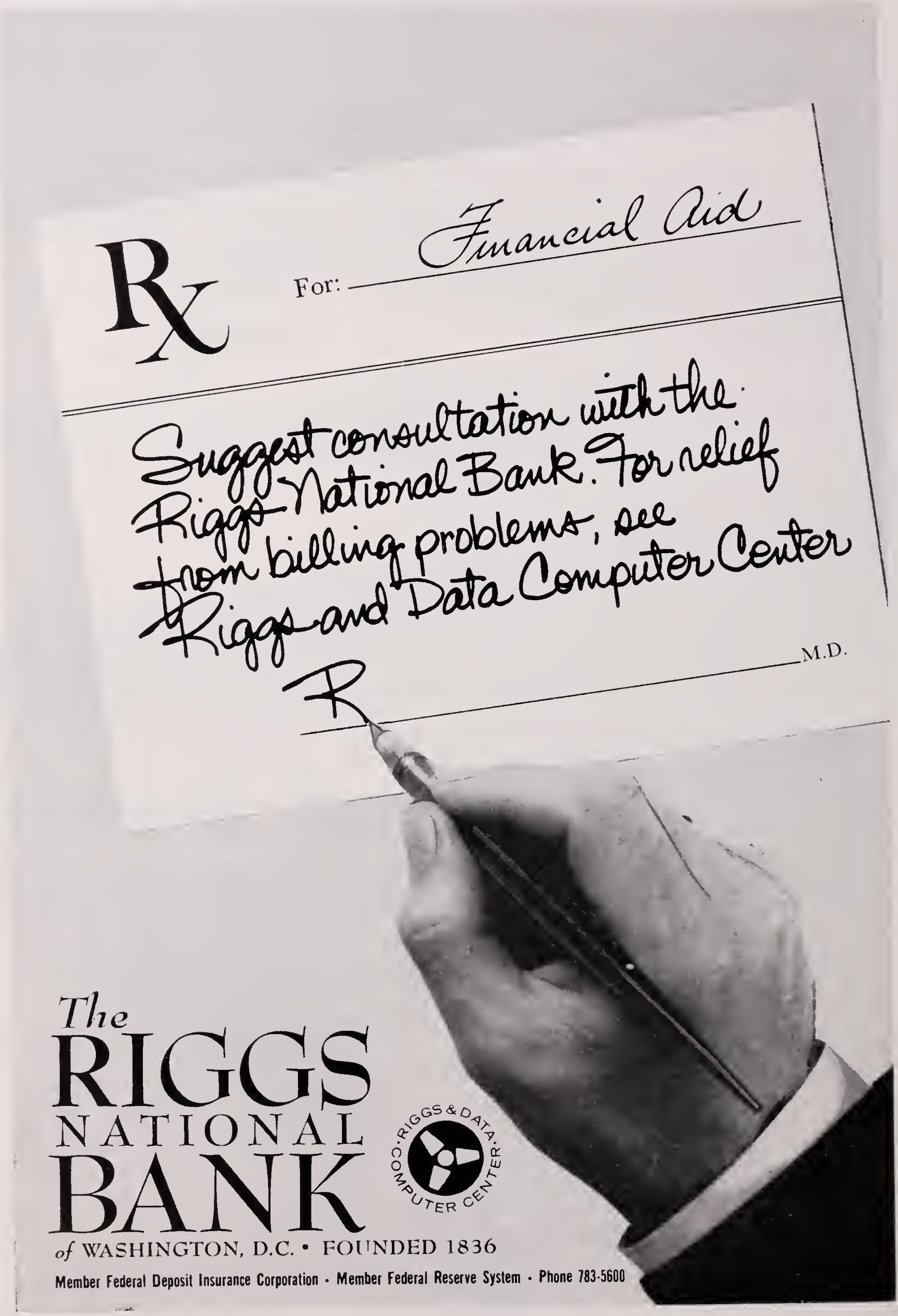

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Yearly Subscription, $8.00
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Second-class postage paid at Baltimore, Md.
Published monthly at
Mount Royal and Guilford Avenues,
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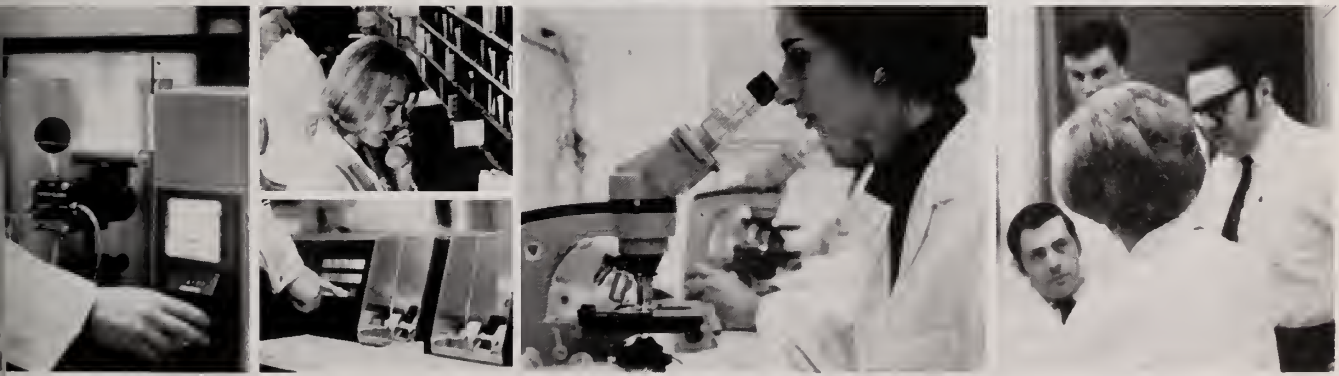

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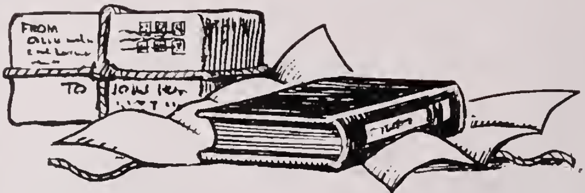

Books Received

Cardiovascular Surgery: Current Practice. Volume I. Thomas H. Burford, M.D., and Thomas B. Ferguson, M.D. Price, $18.00. Pp. 273, with 134 illustrations. St. Louis: Mosby, 1969.

A Husband's Guide to Menopause. William H. Cooper, M.D. Price (paper), $1.00. Pp. 143. New York: Essandess Special Editions, 1969.

Tobacco and Your Health: The Smoking Controversy. Harold S. Diehl, M.D. Price (paper), $2.95. Pp. 271, with 17 illustrations. New York: McGraw-Hill, 1969.

System of Ophthalmology. Volume XI. Diseases of the Lens and Vitreous; Glaucoma and Hypotony. Edited by Sir Stewart Duke-Elder. Price, $47.50. Pp. 779, with 686 illustrations and 9 color plates. St. Louis: Mosby, 1969.

Textbook of Nuclear Medicine Technology. Paul J. Early, B.S., Muhammad Abdel Razzak, M.B.B.Ch., D.M., M.D., and D. Bruce Sodee, M.D., F.A.C.P. Price, $15.00. Pp. 378, with 241 illustrations. St. Louis: Mosby, 1969.

Symposium on Cancer of the Head and Neck; Total Treatment and Reconstructive Rehabilitation. Volume II. Proceedings of the Second Annual Symposium of the Educational Foundation of the American Society of Plastic and Reconstructive Surgeons, Inc., held at Pittsburgh, Pennsylvania, December 2, 3 and 4, 1968. John C. Gaisford, M.D., Editor. Price, $31.50. Pp. 381, with 583 illustrations. St. Louis: Mosby, 1969.

Atlas of Diagnostic Techniques and Treatment of Intraocular Foreign Bodies. William H. Havener, M.D., and Sallie L. Gloeckner, M.A. Price, $19.50. Pp. 197, with 90 plates of drawings. St. Louis: Mosby, 1969.

Strabismus, Heterophoria, Ocular Motor Paralysis; Clinical Ocular Muscle Imbalance. Professor René Hugonnier and Doctor Suzanne Clayette-Hugonnier. Translated by Suzanne Véronneau-Troutman, M.D., F.R.C.S. (C). Price, $35.00. Pp. 709, with 271 illustrations. St. Louis: Mosby, 1969.

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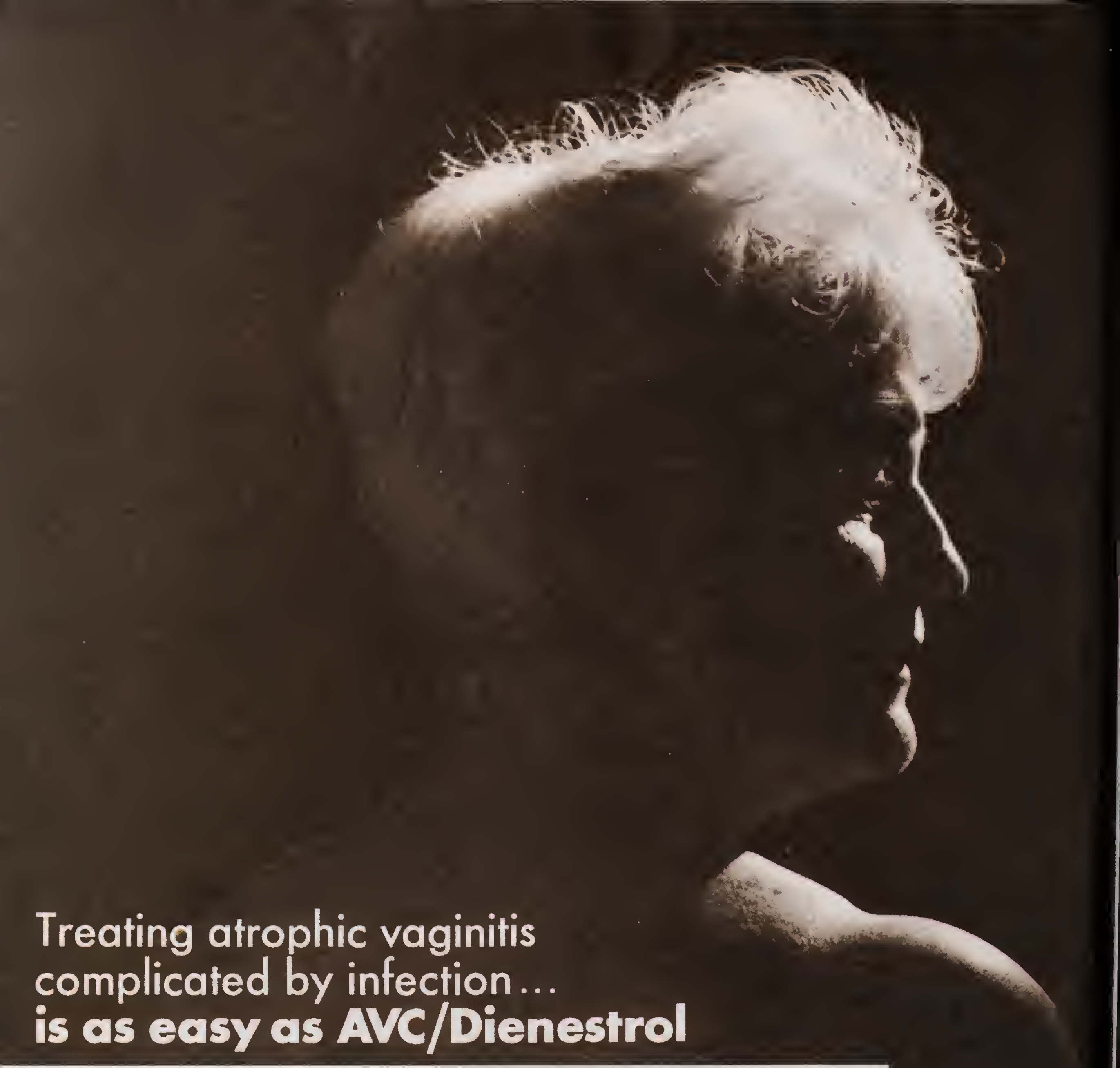

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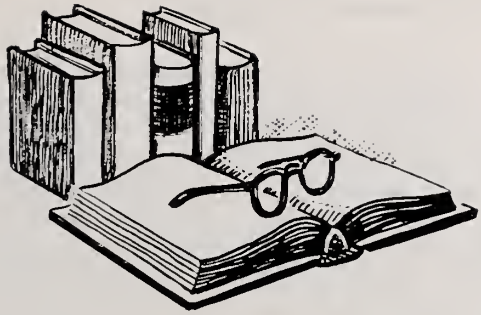

Book Reviews

Make Mad the Guilty. Richard Arens. Price, $12.75. Pp. 285. Springfield, Ill.: Thomas, 1969.

The first 2 chapters, in attempting to set the backdrop for what is to come, raise some interesting and pointed issues in regard to how the Durham rule has affected the administration of criminal justice in the District of Columbia. Professor Arens emphasizes that prior to Durham psychiatric testimony was focused mainly on the intellectual capacities of the accused. Under the Durham decision, psychiatric experts and the Court were given the latitude of attempting to evaluate the accused's mental status at crucial points in his life from a broader point of view, thus ultimately allowing for a greater understanding of the person on trial and, hopefully, a more humane and rational treatment of him. The author asserts that psychiatrists in general have shrunk from this position because they "often labored under the distinct impression that the duty of legal, social, economic and metaphysical analysis devolved upon them . . ." (page 18).

The book itself rapidly shrinks back from this most promising beginning. A major reason for this retreat would appear to be the author's constant attempts at self-justification and his collateral attempts to cast aspersions and vilify those who he believes have opposed him. As a result, the documenting case material seems carefully selected to demonstrate the inadequacy of the Washington psychiatric community, the Courts, and that portion of the legal profession associated with the prosecutor's office. No attempt is made to present counterillustrations (even though in the author's opinion these may have been in a small minority) to demonstrate how ideally the Durham decision might have operated. Surely there must have been 1 or 2 such cases during the period of his study. Thus, the scientific approach to the subject is sabotaged.

The work is further hampered by what (charitably) appears to be the author's inadequate understanding of psychiatry. In chapter 3, for example, he cites the example of Fredrick Lynch who was diagnosed as a manic-depressive. The writing would lead the reader to the conclusion that the patient as a result of the litigation he was forced to pursue was shunned by associates and neighbors and ultimately committed suicide. Such reasoning ignores the usual symptoms and course of the illness.

In chapter 4 he devotes no time whatever to the possibility that a patient suffering from a chronic schizophrenic condition might have remissions and exacerbations and might reveal pertinent information to interviewers he felt were friendly while concealing the same from those he felt to be hostile. Professor Arens further takes the position in several chapters that expert witnesses should be advocates (of the defense) and not impartial witnesses.

Finally, the conclusion of chapter 4 (page 124) seems illustrative:

"Dr. Salzman's *whodunnit* appeared in a respected psychiatric periodical.

"As he saw it, the end result was entirely attributable to the 'coöperative endeavor' between the psychiatrist for the defense and those of St. Elizabeths Hospital and the consequent avoidance of the 'usual contentious situation.' In this light the role of the lawyers might almost be viewed as irrelevent to, if not actually obstructive of, the happy outcome.

"I, of course, see the matter very differently.

"But the reader is perhaps left to draw his own conclusions."

With the obvious distortions the author has introduced, it is difficult for the reader to draw any conclusions but those preselected for him by the author.

Edward I. Kushner, M.D.

The William Mackenzie Centenary Symposium on the Ocular Circulation in Health and Disease. Proceedings of a Symposium held at the Royal College of Physicians and Surgeons of Glasgow 23rd–24th September 1968. Edited by J. Stanley Cant. Price, $17.00. Pp. 270, illustrated. St. Louis: Mosby, 1969.

This book records the proceedings of a symposium held at the Royal College of Physicians and Surgeons of Glasgow in September, 1968 to mark the centenary of the death of William Mackenzie. Also included in the publication is the William Mackenzie Memorial Lecture, delivered by Dr. David G. Cogan.

The symposium is divided into 4 sessions, including presentations on the anatomy and physiology of the ocular circulation, techniques of investigation, systemic vascular disease, and vascular retinopathies. Of particular interest to the clinician are such communications as the long-term fundus changes in hypertension, ischemic optic neuropathy with and without associated temporal arteritis, central retinal vein thrombosis, treatment of diabetic retinopathy, developmental arteriovenous communication of the retina, and treatment of Coats' disease.

A particularly provocative paper was one presented by Watson on the treatment of acute retinal arterial occlusion by perfusion of the eye with antispasmodic and thrombolytic agents administered through cannulation of the supraorbital artery. With this method he obtained beneficial results in 50 per cent of 14 cases.

Dr. Cogan's lecture on Retinal and Papillary Vasculitis is "must" reading for all ophthalmologists. Fourteen clinical cases of this enigmatic condition are presented. Four of these eyes became available for histopathological examination, making a clinical and pathological correlation possible.

These proceedings should command the attention of all physicians interested in vascular disease of the eye.

HAROLD I. RODMAN, M.D.

Atlas of Human Electron Microscopy. RUBÉN P. LAGUENS, AND CÉSAR L. A. GÓMEZ DUMM. Price, $20.50. Pp. 180, illustrated. St. Louis: Mosby, 1969.

The authors present this Atlas as the first book dealing exclusively with human histology on an ultrastructural level. It has been prepared for "medical students, pathologists who are beginning the study of electron microscopy, and physicians in general." There can be no doubt that there is a real need and demand for such a book. It is doubtful that this Atlas will fulfill such a need.

Relatively good reproductions of electron micrographs are included in the book. For the most part, legends adequately identify ultrastructural components and are easy to follow. All body systems (with the exception of the musculoskeletal system) have been photographed. Tissues were obtained either by biopsy or immediately postmortem.

Criticism of the Atlas falls into 3 major categories: grammatical, organizational and professional. The book was apparently written in Spanish and translated into English. In view of the time-consuming and difficult task assumed by the authors, it is a pity that some small effort was not expended in properly translating and editing the book. Terminology and interpretation are not precise or in keeping in some instances with current usage (lung section). There seems to be no organized pattern for the presentation of material. There is no attempt to graduate the reader's intelligence of structural detail. Smooth muscle micrographs, for instance, are taken at × 5000, and no further distinction of fine detail is offered or discussed. The most serious defect would appear to be lack of text. A brief discussion of critical normal cellular detail with correlation of physiologic function, where possible, would assist the novice in recognition of standard deviations of normal ultrastructure, as contrasted with the abnormal or pathologic states.

Until a more adequate Atlas is compiled, this book could probably be used as a library reference.

MARY J. MATTHEWS, M.D.

Studies in Clinical Enzymology. D. P. MULLAN, M.D. Price, $12.00. Pp. 238, with 31 illustrations. St. Louis: Mosby, 1969.

In this compact volume, at 5 cents a page, the author has made a substantial contribution to the literature of the clinical significance of enzymes. The first 2 chapters are devoted to the nature of enzymes and isoenzymes. The remaining 9 chapters are devoted specifically to organ systems, pregnancy and cancer. In addition to the chapter on enzyme changes in myocardial infarction, there is a separate chapter on the enzyme studies in African heart disease. In Africa entirely different types of heart disease occur, and ischemic heart disease is uncommon. The African patient usually exhibits gross heart failure, and account must therefore be taken of alteration of serum enzyme activity due to acute hepatic congestion. In the chapter on imported tropical diseases a detailed account is given of liver function. The lengthy chapter on enzyme studies in pregnancy stresses oxytocinase and alkaline phosphatase which increase during pregnancy.

Each of the 11 chapters is obviously rounded into a detailed comprehensive unit. A brief bibliography and an extensive reference section are included at the end of each chapter so that the experience of many scientists and clinicians is presented. The tables are invaluable.

No attempt has been made by the author to review the whole of enzymology. His purpose, as mentioned in the introduction, has been to select various clinical topics and describe the enzyme changes which occur. The reading of this book can be stimulating to any physician or scientist regardless of specialty, or anyone desiring a quick review of the field.

A. EARL VIVINO, M.D.

Urinary Tract Infection in Childhood and Its Relevance to Disease in Adult Life. VICTORIA SMALLPEICE, M.D., F.R.C.P. Price, $9.50. Pp. 171, illustrated. St. Louis: Mosby, 1969.

The author is to be congratulated for compiling a thorough, concise monograph on urinary tract infections in childhood. Chronic pyelonephritis of early adult life is believed to have its origin in the pediatric age group. As the author states, "A study of etiology, presentation and treatment of the disease as seen by the pediatrician could therefore be of interest to those who meet the condition later in its course." Her series provides data on age of onset, sex incidence, significance of ureteral reduplication, the role of vesicoureteral reflux, and obstructive uropathy. The text is based on a review of 343 cases of urinary tract infection in children cared for by the author between 1945 and 1965. Conclusions regarding treatment and prognosis are drawn from this experience.

The keystone of diagnosis is demonstration of bacteriuria, asymptomatic or symptomatic. Intermittency of bacteruria and pyuria are stressed. Methods of collection for clean-caught midstream urine cultures in the

(Continued on page 18)

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Book Reviews

(Continued from page 16)

neonatal and older child are presented. Dr. Pryle's study is quoted in which catheterized and clean voided cultures are compared to suprapubic aspiration. There is a 97.5 per cent correlation of a catheter specimen with suprapubic aspiration. A clean caught midstream specimen showed 94 per cent correlation with the catheter specimen. In children under 3 years of age 16.5 per cent had colony counts of 100,000/ml. or more with completely negative catheter specimens. The frequency of contamination secondary to vaginitis and vaginal reflux of urine during micturition is stressed. This is especially true in the diaper age. In such instances catheterized urine specimens are obtained.

Most cases come to light before 3 years of age. There is decline of bacteruria in the general pediatric population after 8 years of age. In the neonatal period the incidence of pyelonephritis is equal. Obstructive lesions in the male (for example, urethral valves) are severer than the female and appear earlier. With the exception of the first few weeks of life, female cases predominate at all ages in childhood. Eight-two per cent of the children in this series were female, 18 per cent male. The role of retrograde urethral infection in girls due to distal urethral stenoses and perineal contamination is emphasized. The author alludes to Washburn's data of infectious disease in childhood which postulates that a defective locus on the X chromosome may impair immunoglobulin synthesis, thus accounting for the differential in sex incidence. Host defence mechanisms are presented.

Many duplex ureters have an abnormal vesicoureteral junction with foreshortening of the intramural tunnel to the lower renal segment. The consequence is a predisposition toward vesicoureteral reflux before infection exists. In females with duplex ureters, there is increased susceptibility to pyelonephritis for the above enumerated reasons. In the male such a vesicoureteral junction with reflux is of less importance, since the bladder urine is more protected from contamination by the pendulous urethra. This is one situation in which the vesicoureteral mechanism in reflux pyelonephritis can be assessed. Etiological and therapeutic theories of congenital vesicoureteral reflux are dealt with thoroughly. The pertinent genitourinary literature is quoted with clarity. As a urologist, I found this section of the text an informative treatise of vesicoureteral reflux.

One entire section is devoted to the role of obstruction and stasis in the etiology of pyelonephritis.

New cases of acute pyelonephritis were treated largely with Gantrisin®. If there was no response in 76 hours, the antibiotic indicated by the sensitivity pattern was chosen. Thereafter, maintenance doses of Gantrisin or Furadantin® were employed for 6 months. With chronic infection, maintenance therapy was instituted for 2 years from the last recurrent attack of pyelonephritis. The author curtails the "2-a-year rule" after age 11 or 12 since the likelihood of recurrence and danger to the "growing kidney" recedes.

The influence of drug therapy on infection and surgical treatment of obstructive uropathy on prognosis are difficult to assess. The extent of renal parenchymal damage at the time of initial diagnosis is the critical determining factor. Progression of pyelonephritis into adulthood and autopsy data are presented. A plea is entered for early diagnosis. Cognizance of the frequency of urinary tract infections in girls emphasizes the importance of interval urinalysis as a part of scheduled periodic visits to the pediatrician.

In short, Victoria Smallpeice's text provides a valuable review of urinary tract infections in the pediatric population. The bibliography provides a most complete reference to the work in this field.

Ian J. Spence, M.D.

Cardiac Arrest and Resuscitation, 3rd ed. Hugh E. Stephenson, Jr., M.D., F.A.C.S. Price, $29.50. Pp. 659, with 233 illustrations. St. Louis: Mosby, 1969.

This 659-page volume with its 59 chapters listed under 9 parts (or subdivisions) represents the most complete compendium of this rapidly blooming phase of modern medicine. The 8 contributors represent but a fraction of those listed in the 39-page bibliography of all books, manuals and articles dealing with this 2-decade-old subject. Notable also are the contributors to this work who came from various parts of the world, especially Russia, Germany and Japan.

This volume was meant to be and is ultradetailed in every respect, beginning with the chapters of Introduction to the Science and History of Resuscitation and extending through the chapters on Elective Cardioplegia and Cardiac Augmentation Systems. By far the greater portion of this volume deals with all of the facets of the techniques of cardiopulmonary resuscitation, and this is where emphasis should be.

Every coronary-care unit, emergency suite, medical library, and cardiologist (intensivist) should have ready access to this book. It is not the type of book to be read from cover-to-cover and there is some reduplication of details when dealing with various viewpoints of the same subject by different authors.

Most chapters are replete with invaluable tables, figures and drawings, many of which are excellent as a quick, ready reference system. Typical of this is a 6-page table dealing with the effects of commonly used drugs on the heart.

There is no doubt but that the authors attempt to present all aspects of controversial issues. This point may be belabored in my estimation especially when series of cases, pro and con, are frequently presented. Also, I believe that a bibliography following each chapter, or each section, would make this volume more valuable to the clinical investigator.

In summary, I have seen no more complete, well-composed volume on such a timely and dynamic phase of medicine.

Thomas F. McMahon, M.D.

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THIS IS THE FIFTH of a sixth series of special numbers of the MEDICAL ANNALS, the scientific material for which is supplied by medical institutions and scientific organizations in the Washington Metropolitan Area. For the HOWARD UNIVERSITY NUMBER the Editorial Board is indebted to Dr. W. Montague Cobb, Consulting Editor of the MEDICAL ANNALS, who secured the papers which appear in this issue.

Staphylococcal Bacteremia in Heroin Addicts

H. O. FARHOUDI, M.D.,* AND V. R. MODY, M.B.B.S., M.R.C.P.†

NARCOTIC ADDICTION at present is a major public and community health problem. About 90 per cent of narcotic addicts use heroin. Many of them use it parenterally.[1, 2]

Narcotic addicts are particularly prone to infections because they use uncleaned equipment and material to satisfy their needs.[1, 3] Narcotic addicts have been known to suffer from such complications as septicemia,[4] acute endocarditis,[5] tetanus,[6,7] hepatitis,[8] and skin infections, depending on the mode or use of narcotics. Hussey and Katz[9] reported that skin infection was the most frequent infection among a group of heroin addicts. Although malaria had been frequently noted in narcotic addicts,[10] since 1943 there have been no reported cases of artificially transmitted malaria in addicts despite a marked increase in narcotic addiction.[3] This may be related to the common use of quinine to adulterate heroin.

Staphylococcal infections are frequent among heroin addicts. Hussey and Katz[9] reported that *Staphylococcus aureus* was isolated from the blood of 7 of 8 patients with acute endocarditis affecting the tricuspid valve. Staphylococcal endocarditis has a mortality rate of 65 per cent.[11] The mortality of staphylococcal septicemia with or without endocarditis is almost the same.[12]

The purpose of this communication is to bring out an unusual frequency of staphylococcal septicemia and endocarditis among a group of heroin addicts who were seen in Freedmen's Hospital between July 1965 and November 1968. Freedmen's Hospital is a community hospital with a majority of Negro patients. A survey of hospital infections done by our group,[13] revealed that the incidence of infections in this hospital was similar to those of other community hospitals, such as King County Hospital (Seattle).

Material and Method

We have reviewed charts of 50 heroin addicts who had 74 admissions, either because of their addiction or its complications. This is a retrospective study of hospitalized patients with limitations inherent in such a study. There have been more addicts who may have escaped this study because the responsible physician did not include addiction in his final diagnosis.

All patients in our series had been heroin addicts for some time, and most of them were admitted to the medical or psychiatric wards. Very few were admitted to other services, such as obstetric for delivery or surgery for removal of a broken needle in the arm while injecting heroin (2 in each instance).

Most of the patients with staphylococcal bacteremia had at least 2 or 3 positive blood cultures. When there was any question of contamination the patient was excluded from our data.

If more than 1 organism was cultured from the blood only 1 infection was counted, and when superinfection occurred during antibiotic treatment it was not counted as another instance of infection.

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Results

Forty-nine patients were Negroes and 1 was white. Twenty-seven, or 54 per cent, of the addicts were males and 46 per cent were females. This almost equal proportion is in contrast to that of Ellinwood et al,[2] who found 4 out of 5 addicts to be males, the majority being between 20 and 40 years of age. In our study we found 32 per cent of the male and 34 per cent of the female addicts to be between 20 and 40 years of age. Twelve per cent of the males and 6 per cent of the females were over 40 (table 1).

TABLE 1: Age Distribution of Heroin Addicts

Age (yrs.)	Sex	
	Male	Female
Under 18	0	0
18–20	5	3
21–24	3	6
25–29	5	1
30–34	5	6
35–39	3	4
40 and over	6	3

Five patients, comprising 6.7 per cent of admissions in our series, were hospitalized for heroin overdose. None had chest X-ray findings compatible with pulmonary edema, which has been described in some cases of addicts with heroin overdose. This supposedly occurs in the absence of pneumonia, heart disease, and pulmonary infarction.[14] Case no. 11, M. E. (table 2), was admitted in coma and suspected of heroin overdose, and her chest X-ray film showed bilateral infiltrates consistent with pneumonitis and not pulmonary edema.

Of 35 (47.2 per cent) instances of infections encountered in 74 admissions, staphylococcal bacteremia was by far the most common infection, occurring in 13 patients (figure 1). Twelve of these had positive blood cultures, and 1, whose blood cultures were obtained 1 day after antibiotic treatment and were negative, had clinical evidence of staphylococcal endocarditis (case no. 3, table 2). These 13 cases are listed in table 2. Eight patients had *Staphylococcus aureus* coagulase-positive bacteremia, 6 with clinical evidence of endocarditis. Five patients had staphylococcal pneumonia, of whom 3 had staphylococcal coagulase-negative infection.

Streptococcus viridans endocarditis occurred in case 4 (M. E., table 2) 1 year after having had staphylococcal tricuspid endocarditis. A fatal Klebsiella pneumonia was seen in a 50-year-old addict who had advanced rheumatoid arthritis, chronic liver disease, and chronic renal insufficiency, and who had been on corticosteroids for a long time.

Skin infections and pneumonia ranked next to staphylococcal bacteremia, with equal frequency in our series. Other infections which were noted in this group were urinary tract infection, septic thrombophlebitis, hepatitis, and septic arthritis.

Although there have been reports regarding frequent occurrences of serum hepatitis in narcotic addicts,[1, 8, 15] in our series only 1 such case was found. Full evaluation of liver function, however, was not done in all cases.

In this connection 4 cases of chronic liver disease were reported. Kaplan[16] reported abnormal liver function tests in 7 of 13 narcotic addicts and noted that the most common abnormality was elevated thymol turbidity.

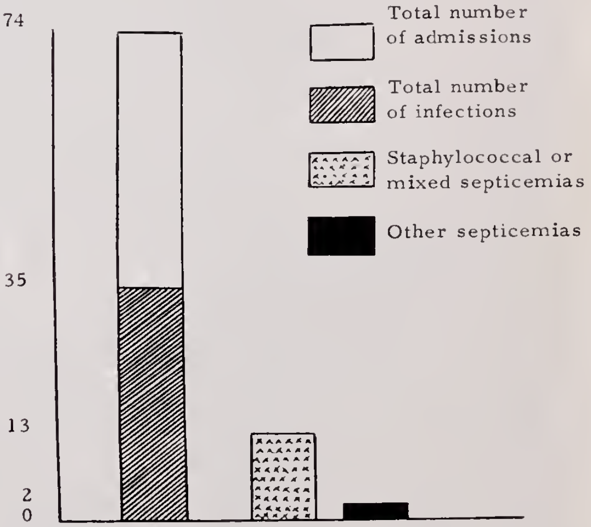

FIG. 1. Incidence of staphylococcal bacteremia in 50 heroin addicts.

All of the patients in our study had scars over the superficial veins of the forearms, but very few had scars in the lower extremities as well. None of these addicts had scars over the external jugular vein in the supraclavicular region, which has been found to be a pathognomonic sign of paregoric abuse.[17]

Serologic tests for syphilis had not been done routinely in every patient, and in only 36 patients were the results of serology available, in 12 of

TABLE 2: Significant Data on the Thirteen Heroin Addicts

Patient	Age and Sex	Organism, Blood Culture, Other Cultures	Clinical Evidence of Endocarditis	Embolism	Other Significant Findings	Chest X-ray Findings	Superinfection	Outcome
1. H. W.	38 M	Blood: *S. aureus*, coagulase-positive	Tricuspid	Lungs and kidneys	Red and white blood cells in urine	Lung abscesses	Blood: Aerobacter and Candida Sputum: Aerobacter and Candida	Died
2. J. C.	56 F	Blood: *S. aureus*, coagulase-positive	Right-sided endocarditis (ventricular septal defect)	Lungs	Presence of ventricular septal defect	Lung abscesses		Signed out
3. R. J.*	44 M	* No growth	Tricuspid endocarditis	Lungs	Renal insufficiency	Pulmonary septic embolism		Discharged
4. M. E.†	24 F	Blood: *S. aureus*, coagulase-positive	Tricuspid endocarditis	Lungs	Urinary tract infection (Aerobacter, *E. coli*, enterococci)	Areas of nodular densities in both lungs. Pneumothorax	Blood: *S. epidermidis*, coagulase-negative	Discharged
5. E. A.	33 M	Blood: *S. aureus*, coagulase-positive	Aortic-valve endocarditis	Lungs, brain	Developed right hemiparesis (rupture of mycotic aneurysm)	Multiple consolidated areas in both lungs		Died
6. M. Q.	31 M	Blood: *S. aureus*, coagulase-positive, enterococcus	Tricuspid endocarditis	Lungs, right ankle joint	Septic arthritis. Neurologic signs before death.	Lung abscesses	Blood: Proteus, Pseudomonas	Died
7. C. J.	24 M	Blood and sputum: *S. aureus*, coagulase-positive, Aerobacter	None		Abnormal liver function tests not suggestive of active hepatitis	Left lower lobe pneumonia and lung abscess		Discharged
8. F. H.	39 M	Blood and sputum: *S. aureus*, coagulase-positive, Aerobacter	None			Pneumonitis and lung abscess		ischarged
9. B. B.	49 F	Blood: *S. epidermidis*, coagulase-negative	Questionable grade I-VI systolic murmur at the apex.		Icterus, abnormal liver function tests	Left lower lung infiltrate		Died in hepatic coma
10. M. N.	42 F	Blood: *S. epidermidis*, coagulase-negative			Icterus, abnormal liver function tests			Died in hepatic coma
11. M. E.	38 F	Blood: *S. epidermidis*, coagulase-negative, anaerobic streptococci			Admitted in coma; no history obtained	Bilateral pulmonary infiltrates		Died few hours after admission
12. T. N.	35 M	Blood: *S. epidermidis*, coagulase-negative Sputum culture: *S. epidermidis*, Candida				Right lower lobe infiltrate		Discharged
13. S. C.	33 F	Blood: *S. epidermidis*, coagulase-negative Skin abscesses: *S. aureus*, coagulase-positive Urine culture: Acrobacter and *E. coli*			Septic thrombophlebitis; multiple skin abscesses; urinary tract infection			Discharged

* Blood cultures were drawn 24 hours after antibiotic (Keflin) treatment.

† Admitted 1 year later with fever, anemia, heart murmur. Blood cultures grew *Streptococcus viridans*.

whom (33.3 per cent) it was positive. This is somewhat lower than the 37 per cent reported by Harris et al[18] and slightly higher than the 20 to 25 per cent recently reported by Cherubin and Millian,[19] who found that both biologic false-positive and truly positive S.T.S. occur in narcotic addicts.

Mortality

Six patients with staphylococcal bacteremia died (46.1 per cent), 2 of whom had chronic liver disease and went into hepatic coma during a course of severe infection. Another patient with chronic liver disease died of Klebsiella pneumonia and septicemia in less than 24 hours. The total mortality rate in our series was 14 per cent.

The following is the hospital course of 3 patients with bacterial endocarditis.

Case 1. H. W., a 38-year-old unmarried Negro who had been a heroin and cocaine addict for 18 months, was admitted on August 19, 1967 because of chest pain, abdominal pain, fever, and shortness of breath for 5 days. The temperature on admission was 103°F and the blood pressure 100/60. The patient appeared acutely ill. Dullness on percussion was elicited over the right lung field. A heart murmur was not audible. Chest X-ray films (figure 2) showed multiple consolidated areas in both lung fields. Three blood cultures on the first day were negative. An electrocardiogram showed right ventricular overload.

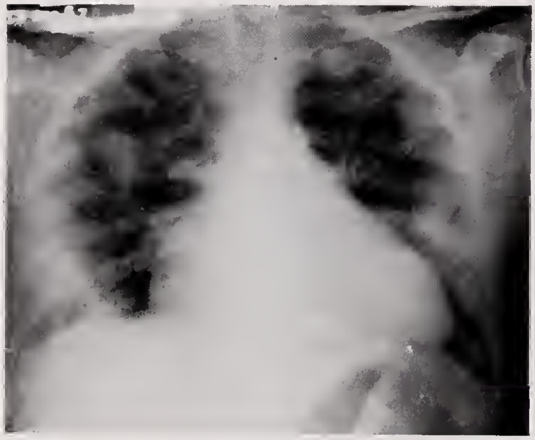

FIG. 2. Marked cardiomegaly and bilateral pulmonary septic emboli due to tricuspid endocarditis.

The patient was given large doses of penicillin but did not respond to it. On the second hospital day he went into shock, which was treated with intravenous fluid, Aramine®, and steroids. Sodium cephalothin was added to the antibiotic regimen. Four days after admission a grade III holosystolic murmur was heard over the tricuspid area. On the seventh hospital day blood cultures grew *Staphylococcus aureus* coagulase-positive resistant to penicillin. He was placed on sodium methicillin but continued to respond poorly to the treatment. Repeated chest X-ray films showed new consolidated areas in the lungs. The temperature remained high. Steroids were continued throughout the hospital course. Several antibiotics, sodium oxacillin, streptomycin and others, were ordered and each proved ineffective. Blood cultures in the third hospital week were negative. On the fifth hospital week Aerobacter species was isolated from the blood, which was sensitive to kanamycin, and this antibiotic was added to the treatment schedule. The general condition grew progressively worse. The patient developed right-sided heart failure, hepatomegaly, anemia, and renal failure. Six weeks after admission the blood culture grew yeast, and a sputum culture at this time also showed yeast, Pseudomonas and Aerobacter species. The yeast-like organism was later identified as *Candida albicans.* The patient received only 1 dose of amphotericin B before he died on September 23, 1967.

Comment. This patient had all clinical findings of tricuspid endocarditis resulting from *Staphylococcus aureus* infection which was resistant to penicillin. He was given many antibiotics and large doses of steroids for 6 weeks. Endocarditis due to Candida is very uncommon because Candida is not an invasive organism. A previously deformed valve by rheumatic fever or bacterial endocarditis is a common site of Candida vegetations.[20] Predisposing factors to severe Candida infections and endocarditis are prolonged antibiotic treatment,[21, 22] steroids, roentgen irradiation, and bone-marrow depressants.[23] Perhaps one of the most important differential points between Candida endocarditis and bacterial endocarditis is the major arterial emboli and presence of a significant heart murmur in the former.[24] A clinical diagnosis of fungal endocarditis can be made if the blood culture is positive for fungus and more common etiologic organisms cannot be isolated from the blood.[23] Although this patient met all the criteria for clinical diagnosis of fungal endocarditis (his blood cultures were negative for other organisms at time of isolation of fungus), the postmortem examination showed healing tricuspid endocarditis and pulmonary emboli. The microscopic sections of tricuspid valve were negative for fungus.

Case 2. J. C., a 56-year-old Negress, was admitted to Freedmen's Hospital on September 6, 1968 because of fever and cough of 1 week's duration. There was a history of heroin addiction for the past 15 years, and for 2 years she had been using heroin intravenously every day. One year before admission she was admitted to another hospital because of a heart murmur, where cardiac catheterization was done and a ventricular septal defect diagnosed.

On admission her temperature was 102°F, and there were recent and old scars over the superficial veins of the hands, forearms, and arms, but skin infection and thrombophelebitis could not be found. Moist rales were audible over the left lung field posteriorly. There was a loud grade IV–VI holosystolic murmur over the entire pericordial area, with its greatest intensity at the left sternal border.

Chest X-ray films on admission showed multiple small abscesses of the lungs (figure 3). Three blood cultures done on the first hospital day grew *Staphylococcus aureus* coagulase-positive sensitive to penicillin and all antibiotics tested. Since the patient had been started on sodium cephalothin and kanamycin while awaiting blood culture reports, these antibiotics were continued.

She became afebrile on the third hospital day. A chest X-ray film on the tenth hospital day was clear. The patient signed out on the same day and did not return for follow-up.

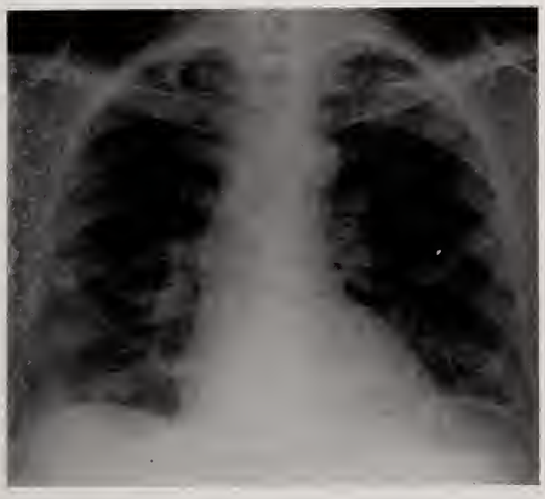

FIG. 3. Pulmonary cavitations as a result of staphylococcal septic pulmonary emboli in a patient with ventricular septal defect.

Comment. It is well known that the heart is more susceptible to bacterial endocarditis in the presence of congenital cardiac anomalies.[25, 26] The usual sites of jet lesions and therefore vegetations of bacterial endocarditis in ventricular septal defect are the septal leaflet of the tricuspid valve and the anterior wall of the right ventricle.[27] Both ventricular septal defect and heroin addiction contribute to susceptibility to right-sided bacterial endocarditis.[26, 28]

We are not aware of the outcome in this case, but there was a benign and favorable hospital course. This probably is because the organism which was isolated from her blood was sensitive to all of the antibiotics tested.

Case 3. R. J., a 45-year-old Negro heroin addict, was admitted to the chest service of Freedmen's Hospital on August 3, 1968 with the chief complaints of fever, chills, nonproductive cough, and epigastric pain of 2 weeks' duration. The temperature on admission was 102°F and the blood pressure 100/70. The patient appeared to be in mild respiratory distress. Scars over the superficial veins of the forearms were present. There were moist rales at the lower left lung field posteriorly. The liver was palpable and tender. A heart murmur was not audible. There was leukocytosis. A chest X-ray film was interpreted as multiple "metastatic" lesions in the lungs. The blood urea nitrogen was 76 mg. The patient was given sodium cephalothin, 1 Gm. q. 4 h. I.M. Three blood cultures drawn on the next day were reported negative. Because of the clinical and X-ray findings sodium oxacillin and aqueous penicillin (20 million units daily) were added to the antibiotic treatment schedule. A repeated chest X-ray film 1 week after admission again showed "metastatic" lesions.

The infectious disease team saw this patient on consultation 13 days after admission because he was still febrile despite intensive antibiotic treatment. At this time a grade II-III holosystolic murmur at the left sternal border and tricuspid area was heard. Because the patient's condition was critical he was transferred to the intensive care unit. Congestive heart failure and renal failure were treated vigorously, penicillin was discontinued, and sodium cephalothin was given, 2 Gm. q. 6 h. intravenously. Repeated blood cultures were negative. The patient developed severe anemia, hypertension, and heart failure. A chest X-ray film on the twentieth hospital day showed "metastatic" emboli in other areas of the lung (figure 4). The patient became afebrile after 3½ weeks of antistaphylococcal treatment, and the general condition gradually improved. An attempt for renal biopsy was unsuccessful. Sodium cephalothin was continued for a total of 6 weeks. Another chest X-ray film showed cardiomegaly and clearance of all "metastatic" lesions. He was discharged on September 24, 1968.

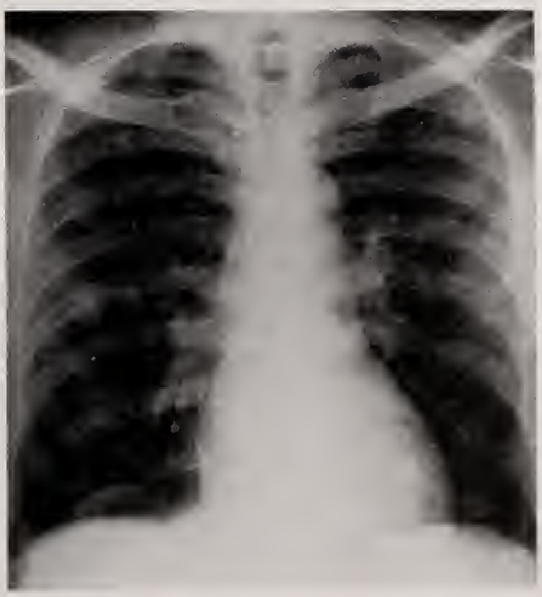

FIG. 4. Metastases to the lung which proved to be secondary to endocarditis.

Comment. Although the blood cultures in this case were negative the diagnosis of staphylococcal bacterial endocarditis is most likely. Waisbren and Abboud[12] in a study of 100 patients with staphylococcal bacteremia found 63 per cent positive blood cultures obtained when blood was drawn before antibiotic treatment. If blood cultures were obtained after antibiotic treatment the positive cultures were only 40 per cent. Repeated septic pulmonary emboli, development of the systolic murmur, and appearance of right-sided heart failure all point to the involvement of the tricuspid valve. One might expect to find septic pulmonary emboli in almost all cases of right-sided endocarditis.[29]

Other patients with staphylococcal endocarditis. The hospital course of the other 3 patients with endocarditis was quite similar to that of case 1 (H. W.). Patient no. 4 (M. E.) recovered from tricuspid endocarditis after 3 months of hospitalization (table 2). On admission her chest X-ray film showed a pneumothorax secondary to staphylococcal lung abscesses. She was readmitted a year later with *Streptococcus viridans* endocarditis. She still attends the follow-up clinic. Patient no. 5 (E. A.) had several splinter hemorrhages. His heart murmur was best heard over the aortic area. He developed paralysis of the right side, which was thought by our neurosurgical team to be due to a ruptured mycotic aneurysm. Patient no. 6 (M. Q.) had a very serious hospital course. At no time during his 10-week hospital course was he afebrile. He was given many antibiotics and large doses of steroids. He developed severe right-sided heart failure with a very large liver and anasarca. He died of superinfection, anemia, and heart failure.

Discussion

Narcotic addicts have a high incidence of infection and a decidedly increased mortality.[30] In a study of 257 narcotic addicts with 288 admissions it was found that 1 out of 7 patients had infection and 11 had bacteremia, in 9 of whom it was caused by *Staphylococcus aureus*.[31] An increased rate of staphylococcal infections in heroin addicts is also reported by many other authors.[1, 9, 28, 30] Staphylococcus is normally present on the skin and mucous membranes and is responsible for suppurative lesions. It has been a common belief that there is a definite relationship between host susceptibility and the disease-producing capacity of staphylococci and that only coagulase-positive strains are pathogenic for man.[32] However, recent work by Cluff et al[33] has shown that coagulase-negative strains of staphylococci can be pathogenic to man under certain circumstances. Our study has shown that staphylococci, whether coagulase-positive or -negative, can be pathogenic to heroin addicts under certain circumstances.

In this paper we are reporting 35 instances of infection which occurred in 74 admissions of 50 heroin addicts. Bacteremia due to staphylococci appeared in 13 patients, 5 of whom had staphylococcal coagulase-negative bacteremia. Pneumonia with confirmatory X-ray findings appeared in 3 of the latter. Reduced resistance and increased susceptibliity are extremely important in predisposing skin and mucous membranes to staphylococcal infection.[34] It is known that narcotic addicts have chronic liver disease (subsequently altered immune mechanism) and frequent infection.[15, 30] In a study of 185 cases of staphylococcal bacteremia which occurred at the Johns Hopkins Hospital between 1952 and 1965, 25 patients had bacteremia due to *Staphylococcus albus*, with a mortality rate of 28 per cent, 18 of whom were males and 7 females.[33] In our study 5 patients had coagulase-negative staphylococcal bacteremia, with 4 females and 1 male. Out of these 5, 3 patients died, 2 of whom had a history of chronic liver disease and died in hepatic coma while recovering from severe staphylococcal infection. Eight patients had bacteremia due to coagulase-positive staphylococci, and 6 of these had endocarditis and 2 had staphylococcal pneumonia. It is difficult to exclude staphylococcal endocarditis in the latter. But as they had a comparatively benign hospital course and did not have a heart murmur or any evidence of right-sided heart failure, we think that the clinical diagnosis of staphylococcal pneumonia was more likely. In this connection it should be pointed out that the presence of a heart murmur is not necessary for the diagnosis of tricuspid endocarditis. In a study of 23 cases of right-sided endocarditis a heart murmur was heard in only 8 cases, and the clinical diagnosis of endocarditis was made only in 6. In 3 cases only was the correct location suspected before death.[35] Goldburgh and his associates,[36] in a study of 20 patients with tricuspid endocarditis, observed a heart murmur in 8, but in none was it heard over the tricuspid area.

The diagnosis of right-sided bacterial endocarditis can be made with some certainty if the patient has fever, positive blood cultures, recurrent septic pulmonary emboli, absence of any evidence of peripheral and pelvic thrombophelebitis, a history of heroin addiction, and a changing heart murmur.[1]

All our cases with staphylococcal endocarditis are summarized in table 2. We have presented case histories of 3 of these in detail.

The diagnosis of tricuspid and right-sided endocarditis was made in 4 and 1 respectively. Aortic-valve endocarditis occurred in 1 patient (case no. 5, table 2).

Approximately 5 per cent of all bacterial endocarditis occurs in the right side of the heart and 95 per cent in the left side.[27] Rheumatic fever is the commonest cause of organic tricuspid regurgitation. However, tricuspid valve endocarditis with resultant tricuspid regurgitation can occur in heroin addicts.[28, 29, 35, 37]

When endocarditis appears in heroin addicts, the tricuspid valve is the most likely site of vegetation. Hussey and Katz[9] reported 8 cases of acute bacterial endocarditis in a group of heroin addicts, in 7 of whom tricuspid endocarditis was diagnosed and the causative organism found to be *Staphylococcus aureus*. In 4 of 6 heroin addicts with tricuspid endocarditis the blood culture grew *Staphylococcus aureus* coagulase-positive, and in the other 2, blood cultures were negative, all of whom had evidence of septic pulmonary emboli.[28] Our series also demonstrates this trend. Although a recent report from New York (Cherubin et al[38]) indicates greater involvement of the left side of the heart in heroin addicts, it would be interesting to know what accounts for this difference in trend in different geographic locations.

From the foregoing it appears that staphylococcal tricuspid endocarditis is an interesting finding in heroin addicts. Right-sided endocarditis is not common in the general population. This might be related to considerable resistance of the right side of the heart to infection as a result of lower hemodynamic pressure and much lower incidence of rheumatic valvulitis in the right side of the heart. Only prolonged exposure to highly virulent organisms might produce right-sided endocarditis.[27] In heroin addicts, because of the frequent use of contaminated equipment, this prolonged exposure occurs. Furthermore, heroin addicts commonly have chronic liver disease and thus altered immunity,[15] which may contribute considerably to lowered host resistance.

The treatment of staphylococcal bacteremia and endocarditis is disappointing even when the organism is sensitive to penicillin.[39] Finland[40] found that in many hospitals 75 per cent of staphylococci are resistant to penicillin. In our study penicillin-sensitive strains were obtained in 3 of 7 patients with staphylococcal coagulase-positive bacteremia.

The mortality rate from staphylococcal bacteremia has not changed appreciably from the pre-antibiotic era. Lowenstein[41] in 1931 found it to be 61 per cent. In 100 cases of staphylococcal bacteremia reported by Waisbren and Abboud[12] the mortality rate was 64 per cent. Cluff and associates[33] recently reported the overall mortality from coagulase-positive and coagulase-negative staphylococci to be 42 per cent. The overall mortality rate in our series was 46 per cent and those with staphylococcal endocarditis 50 per cent.

The role of adrenal cortical steroids in the dissemination of staphylococcal infection and its effect on the outcome of the disease is still open to debate. Many investigators believe that it has an unfavorable effect upon the outcome of the disease.[11] However, recent experimental work shows that the steroids have probably no effect upon the mortality from staphylococcal infections.[42] Two of the patients in our series who received steroids for long periods of time died from superinfection, but we think that the number is too small to draw any conclusions.

Summary

Seventy-four records of 50 heroin addicts who were admitted to Freedmen's Hospital between July 1965 and November 1968 were reviewed. Thirty-five instances of infection were noted, 13 of which were caused by staphylococcal bacteremia, including 1 patient whose blood cultures were drawn 1 day after antibiotic treatment but had all clinical evidence of staphylococcal endocarditis. Coagulase-negative staphylococci were isolated from the blood of 5 patients.

We are suggesting that coagulase-negative staphylococci can be pathogenic in heroin addicts whose resistance has been lowered by chronic liver disease and frequent infections. Right-sided endocarditis occurred in 5 of 6 patients with endocarditis. Case summaries of 3 of these have been presented in detail. The overall mortality rate from staphylococcal bacteremia in heroin addicts in our series was 46 per cent. The introduction of potent antimicrobials has not altered the overall mortality rate significantly.

ADDENDUM: Since the completion of this study there have been 6 additional cases in heroin addicts, 4 of whom showed evidence of infection. One patient has coagulase-positive staphylococcal bacteremia with clinical evidence of tricuspid endocarditis (heart murmur and repeated septic pulmonary emboli). This patient also has abnormal liver function tests compatible with serum hepatitis. He is still under intensive antistaphylococcal treatment. Other infections in this group were serum hepatitis, streptococcal bacteremia, and sore throat.

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Herpes Zoster in Children

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HERPES ZOSTER is a viral disease of sensory-nerve root manifested mainly as grouped vesicles on an inflammatory base on the skin involving the dermatome of the affected sensory nerve. More than 1 dermatome may be involved. The purpose of this paper is to report 7 cases we have observed in children and to review the literature in an effort to summarize available clinical data concerning the disease in children. The cases are presented in table 1.

TABLE 1: Summary of Seven Cases of Herpes Zoster in Children

Case No.	Age (yrs.)	Sex	Race	Location	Itching	Burning	Pain	Fever	Duration (days)	Complication	Scar	Past History of Varicella	Past History of Zoster	Exposure to Varicella	Exposure to Zoster
1	10	F	N	Thorax	Yes	No	Yes	No	14	No	No	?	?	?	?
2	11	M	N	Eye	No	No	No	102°F	15	No	No	No	No	No	No
3	3	F	N	Eye	No	No	No	101.8°F	20	No	Slight	No	No	Yes	No
4	2	M	N	Flank	Yes	No	No	No	15	No	Slight	No	No	No	No
5	11	M	N	Neck	Yes	Yes	No	No	18	No	No	Yes	No	No	No
6	4	F	N	Thigh	Yes	No	Yes	No	21	No	Slight	No	No	No	No
7	10	F	W	Neck	No	No	No	100.2°F	10	No	No	Yes	No	?	No

Although there are scattered case reports in the literature we could not find a report of a large series of pediatric patients with herpes zoster. In an early report Knowles[1] stated that 101 (35.5 per cent) of 284 cases with herpes zoster were 15 years old and younger. Evans[2] found half of his cases to be under 14 years of age. In recent reports the incidence is lower in children than in adults.[3, 4, 5] According to available reports the incidence in children ranges from 1.9 to 50 per cent.[1–8] Significant figures concerning the incidence of herpes zoster was provided by Seiler.[9] He studied 184 cases in an epidemic and compared the prevalence of these cases with the occurrence of the disease in the general population. He found that the incidence increased with age. He estimated that there are 2 cases of herpes zoster per 1,000 population per year.

In Knowles' series[1] 205 (72.1 per cent) of 284 patients were males. Gais and Abrahamson[10] gave a male to female ratio of 3 to 2. In other studies no sex difference was observed.[3, 4, 9, 11]

Etiology

Herpes zoster is caused by a virus which is the same or identical to that of varicella. The relationship between herpes zoster and varicella has been discussed for decades. Rake et al[12] studied the vesicular fluids of herpes zoster and varicella by the electron microscope. They examined the elementary bodies in the fluids and found them to be similar or identical. They stated that both diseases are caused by the same virus.

According to the generally accepted hypothesis of Stokes, the primary infection with varicella-zoster (V-Z) virus is manifested as chickenpox. After a patient recovers from the initial infection the virus may persist in the tissues. Later in life the virus may become active and produce the syndrome of zoster.[13] Weller[14] stated that varicella reflects the consequences of primary contact of the individual with V-Z virus and that the eruption of zoster represents activity of the V-Z virus in an individual possessing partial immunity as the result of a prior contact with the virus.

Clinical Course

The skin lesions of herpes zoster are usually characteristic. They consist of grouped, tense vesicles. Each vesicle is about 3 to 4 mm. in diameter with an erythematous base. The lesions extend over the dermatome or dermatomes of the involved sensory-nerve roots. These vesicles undergo resolution by crust formation without rupturing. New vesicles may form on another section or sections of the involved dermatome. The crusts drop off, usually without leaving a scar unless the lesions became hemorrhagic or gangrenous or secondarily infected. The clinical course of an uncomplicated case is usually much shorter in children than in adults. In 30 out of 32 cases reported by Burgoon et al[8] the duration was 10 to 14 days. In 7 cases of Winkelmann and Perry[15] it was 2 to 4 weeks. The duration of the disease in our 7 cases was from 10 to 20 days.

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Pain in herpes zoster is a commonly associated symptom in adults. It may precede the eruption or occur simultaneously with the onset of the eruption. Out of the 137 adult cases of Gais and Abrahamson[10] 118 (86.1 per cent) had pain. DeMoragas and Kierland[5] stated that 83.3 per cent of 25 cases under 20 years of age did not have pain. They also stated that the duration of pain increased with the age of the patients. Four (57.1 per cent) of 7 children reported by Winkelmann and Perry[15] did not have pain. In the review of Edgerton[3] pain was less severe in children than in adults. Two of our 7 patients had very mild pain or discomfort.

Burgoon and his associates[8] stated that systemic reactions such as headache, malaise, nausea, fever, stiff neck, and regional lymphadenopathy are more common in the pediatric group. Three of our patients (cases 2, 3 and 7) had fever—102°F, 101.8°F, and 100.2°F, respectively.

Although the lesions are almost always distributed unilaterally, bilateral herpes zoster may occasionally be observed. This was noted in 0.5, 0.7 and 1.9 per cent of the cases respectively in 3 different reviews.[3, 8, 10] Any part of the skin may be involved. It would seem that the thorax is the most common site of the lesions (figure 1). Half of the 81 cases of McGregor[4] had lesions on the thorax. Edgerton[3] stated that ophthalmic zoster is the second most common type after thoracic zoster (figure 2). Generalized vesicular zoster occurs occasionally, being more common than bullous, hemorrhagic, and gangrenous types. The generalized lesions are usually scattered and mild. Although significant data are lacking, the incidence of generalized lesions seems to be the same in children and adults. In the series of Burgoon et al[8] 4 (2.3 per cent) of 176 adults had generalized lesions, with none occurring in 32 patients under 20 years of age. Two (28.7 per cent) of 7 children reported by Winkelmann and Perry[15] had generalized lesions. Thirty-eight per cent of 184 cases of all ages in Seiler's series[9] had generalized zoster. On the other hand, generalized lesions are very common, according to Buckler and Jones.[11]

Recurrent attacks of herpes zoster may occur. This was observed in from 1 to 5.8 per cent of the cases in different series.[3, 8, 10] Visceral involvement has not been reported in children.

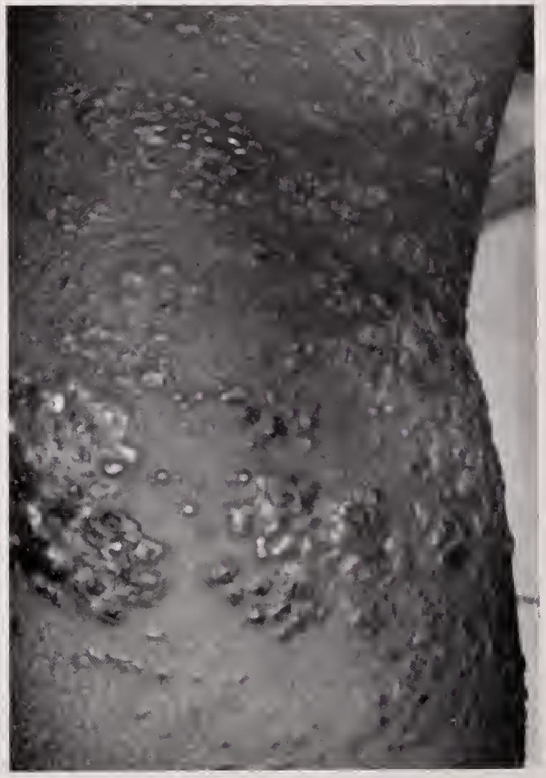

FIG. 1. Case 4. Two-year-old child with involvement of right thorax and flank.

Complications

Postherpetic neuralgia is a common complication limited to adults. This was observed in 33 out of 47 adults with ophthalmic zoster in the series of Tatlow.[16] It seems that postherpetic neuralgia does not occur in children. None of the 32 children in the series of Burgoon et al[8] had this complication.

Complications involving the central nervous system, such as meningitis, encephalomyelitis, and motor paralysis, may occasionally be observed in both children and adults.[8, 10, 15]

Complications of herpes zoster ophthalmicus are more common and severe, especially in adults. In Edgerton's review,[3] involvement of the cornea and ocular muscle paralysis were observed in 39 and 10.7 per cent of the cases respectively. Optic atrophy was reported as a rare complication in a 4-year-old child.[17] One of our 2 patients with ophthalmic zoster had involvement of the cornea which healed in a short time without complication.

O'Neill[18] reported 8 cases of herpes zoster auris (Ramsey Hunt's syndrome). Two of the patients were children; both developed facial paralysis.

Association of zoster with malignancy has been reported both in children and adults.[19–23] Wright and Winer[19] studied 55,279 hospital admissions and observed that the incidence of zoster was 3 times higher in patients with malignancy than in nonmalignant patients. One may wonder if this is due to the neoplasm or to the longer stay of these patients, providing an opportunity for a longer observation period. The patients with malignancy are also debilitated and older individuals; this may be another reason for the higher incidence of zoster. Shambrom et al[20] stated that therapy with X-irradiation, alkylating agents, and corticosteroids may increase susceptibility in these patients. Keidan and Mainwaring[21] reported 5 cases of zoster in children associated with malignancy. They stated that treatment by the alkylating agents did not appear to have an aggravating effect on the course of the herpes zoster.

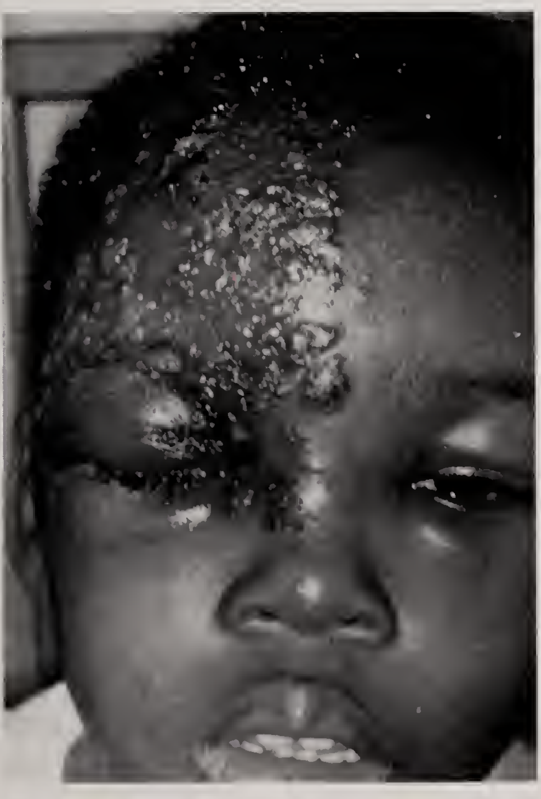

FIG. 2. Case 3. Three-year-old child with ophthalmic zoster.

Muller[22] stated that the course of the disease in children with malignancy is more severe and the complications greater in comparison to the morbidity in children who are otherwise healthy. However, in the cases reported by Burnell et al[23] the course of the disease in children with malignancy was no more severe than in that of healthy children. All of the children, including those with malignancy, developed varicella-zoster antibody in adequate amounts.

Treatment

Herpes zoster is a self-limited disease. Other than symptomatic therapy there has been no definitive treatment. Several measures or methods, such as antibiotics,[24, 25] convalescent blood,[26] autohemotherapy,[25] Pituitrin®,[25] vitamin B,[25] etc., have been tried without effective results. Elliot[27] used prednisone (60 mg./day the first week, 30 mg./day the second week, and 15 mg./day the third week) in 16 adults with zoster. He stated that the duration of pain was one-seventh as long in treated patients as in the controls. He also found no postherpetic pain in the treated patients. Carter and Royds[28] used prednisone in 15 adults with faster drying of the lesions, less scarring, and less pain but with no effect on the complications of the disease.

Summary

Seven children with herpes zoster have been presented and the literature reviewed. Herpes zoster is not an uncommon disease in children, although it occurs less frequently in them than in adults. The incidence of the disease increases with age. In children the course of the disease is usually less severe. Postherpetic neuralgia is exceedingly rare in children, and other complications of the disease are less common. The morbidity of the disease is reported to be greater in individuals suffering from malignancy and in those who are under therapy with agents that tend to depress the immune mechanism of the body. The clinical management is based essentially on symptomatic therapy.

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Growth and Nutritional Patterns of Selected Children with Minimal Faulty Neurologic Integration

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The effects of malnutrition on human physical growth and mental development are of great concern today, not only in less affluent countries of the world but also in the United States. Although many studies on malnutrition have been carried out in various parts of the world, there is still a great lack of knowledge regarding the importance of proper nutrition to specific aspects of growth and development.

This study is a retrospective analysis of the nutritional status and early feeding patterns of 40 selected children with minimal faulty neurologic integration from the Child Development Clinic at Howard University. The study was made to compare the growth status of these children at the time of initial clinic evaluation with recently published standards for children of Afro-American descent,[1] to determine if early or present nutritional patterns could be incriminated in any observed deficiencies in physical and intellectual functioning, and to discover if any trends could be cited in the early feeding patterns of these children which might be of predictive or suggestive value in the early diagnosis of minimal faulty neurologic integration.

Methods

Forty children from 3 to 12 years of age were selected for review from the files of children seen in the Child Development Clinic between 1966 and 1969. They were all from the Greater Metropolitan Washington Area. All had been involved in some form of structured group setting (day care, Head Start, school) where intellectual achievement had been questioned. All had also participated in a complete multidisciplinary diagnostic evaluation, including detailed medical and neurologic evaluations with supportive laboratory studies, psychologic, social and educational assessments, and were diagnosed as functioning intellectually in the borderline range of intelligence or higher with evidence of minimal faulty neurologic integration.

A detailed nutritional history was obtained by the nutritionist, and information relative to socioeconomic levels and family background was obtained by the social worker and public health nurse. For purposes of this study malnutrition is defined as an impairment of growth resulting from failure to meet the physiologic requirements of the individual.[2] Undernutrition is defined as an insufficient quantity of food consumed or a lack of 1 or more essential nutrients. Satisfactory food intake is defined as a daily intake which includes the 4 food groups as described in the Daily Food Guide,[3] plus additional foods, such as desserts, fats and sweets, to satisfy caloric requirements.

All of the children were from middle- and low-income families. Low income is defined as an annual income of less than $5,000 for a family of 3 (mother, father and child). For each additional child an allowance of $600 is added. The majority of the children were of Afro-American descent (5 Caucasians).

The principal dimensions measured were height and weight. Measurements obtained were compared to the mean values recently published by Verghese, Scott et al.[1]

Results

The gross annual incomes for the families of the children studied are shown in table 1. When these incomes are subjected to further analysis, based on the number of persons in the household, the adjusted annual incomes show that 14 families are in the low socioeconomic income category while

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TABLE 1: Family Income

Annual Income	No. Families	Per cent of Total
$10,000 and above	16	40.0
$5,100–$9,999	16	40.0
$5,000 and below	7	17.5
Public assistance	1	2.5
Total	40	100.0

26 are classified as middle income or above (table 2).

TABLE 2: Socioeconomic Income Level

Socioeconomic Income Level	No. Families	Per cent of Total
Middle income or above	26	65.0
Low income	13	32.5
Public assistance	1	2.5
Total	40	100.0

Thirty-four of the children selected for study were males and 6 were females. The sample was divided into age groups: 3 years, 0 months to 5 years, 11 months; 6 years, 0 months to 8 years, 11 months; and 9 years, 0 months to 12 years of age. There were 9 children in Group I, 14 in Group II, and 17 in Group III. A summary of findings is shown by age in tables 3, 4 and 5.

TABLE 3: Measurements for Children from Age 3 Years, 0 Months to 5 Years, 11 Months

Subject	Sex	Age (yrs.-mo.)	Weight (Kg)	Mean Standard (Kg)	Height (cm.)	Mean Standard (cm.)
F. S.	M	3.5	15.0	14.9	100.3	96.1
W. W.	M	4.2	17.6	17.2	103.0	103.7
K. T.	M	5.4	22.2	19.3	119.4	110.9
K. R.	M	4.7	17.5	18.4	108.0	107.0
C. R.	M	5.3	16.5	19.3	110.5	110.6
A. S.	M	5.8	20.4	20.2	120.7	112.1
T. W.*	M	5.6	19.3	19.4	119.4	111.6
P. K.*	M	5.5	18.6	19.4	110.5	110.3
J. F.*	M	5.0	18.2	19.3	101.6	109.5

* Non-Afro-American.

Physical measurements. In the age group 3 years to 5 years, 11 months only 2 children (C. R. and J. F.) measured below the mean value for height and weight. C. R. had a known diagnosis of sickle-cell anemia. J. F. had a normal hematocrit and hemoglobin level, as did all other children in this group, with no clinical signs of malnutrition.

TABLE 4: Measurements for Children from Age 6 Years, 0 Months to 8 Years, 11 Months

Subject	Sex	Age (yrs.-mo.)	Weight (Kg)	Mean Standard (Kg)	Height (cm.)	Mean Standard (cm.)
R. C.	M	8.0	20.0	26.4	116.7	127.7
G. S.	M	6.10	21.9	23.4	128.9	119.9
D. S.	M	7.4	30.9	24.4	138.4	121.3
R. Co.	M	8.11	28.9	28.8	132.2	132.1
V. C.	F	6.0	21.3	19.5	123.2	112.7
D. L.	F	8.0	34.0	25.6	140.9	127.0
R. B.	M	6.11	24.0	23.2	124.5	119.9
T. H.	F	8.0	29.0	25.6	135.9	127.0
H. T.	M	6.11	23.8	23.2	124.5	119.9
R. H.	F	6.7	24.0	21.4	115.6	117.5
D. P.*	M	7.2	23.1	24.0	118.1	120.9
L. G.	M	6.7	23.4	22.4	119.4	117.9
H. M.	F	6.6	13.6	21.2	94.0	116.8
D. H.	M	8.0	24.0	26.4	125.7	127.7

* Non-Afro-American.

TABLE 5: Measurements for Children from Age 9 Years, 0 Months to 12 Years, 6 Months

Subject	Sex	Age (yrs.-mo.)	Weight (Kg)	Mean Standard (Kg)	Height (cm.)	Mean Standard (cm.)
V. R.	M	9.11	40.4	32.4	143.5	138.0
G. W.	M	12.3	61.1	40.6	163.8	143.2
R. W.	M	9.2	30.1	29.7	135.9	134.0
R. M.	M	9.0	47.7	29.1	139.1	133.0
G. W.	M	11.1	30.5	30.9	154.9	142.8
L. A.	M	11.0	38.4	34.1	146.0	142.6
R. S.*	M	9.1	28.1	29.3	135.9	133.5
L. B.	M	11.0	58.0	34.1	177.8	142.6
T. J.	M	9.7	28.2	31.2	142.2	136.5
R. R.	M	10.2	36.4	33.2	142.2	138.9
J. L.	M	11.0	39.5	34.1	142.9	142.6
C. S.	M	11.1	30.0	30.9	142.2	142.8
J. A.	M	9.3	31.7	30.0	137.2	134.5
A. B.	M	10.10	37.3	33.9	149.8	140.4
D. G.	F	10.0	49.8	32.8	145.7	139.2
J. W.	M	10.0	32.7	33.0	142.2	138.5
R. G.	M	11.1	44.5	30.9	151.1	142.8

* Non-Afro-American.

Two children (R. C. and H. M.) in the age group 6 years to 8 years, 11 months measured below the mean for height and weight. All relevant laboratory studies on R. C. who, significantly, was from a middle-income home, were within normal limits. H. M. represented the 1 child in the group whose family was on public assistance. Hemoglobin and hematocrit levels for this child were borderline (10 Gm.; 31 per cent).

All children in the 9- to 12-year age group measured well within the norms for height, weight, hematocrit, and hemoglobin levels.

Early feeding. Early feeding histories revealed that 6 of the 40 children were breast-fed for a maximum of 6 months. Evaporated milk formulas were taken by 22 children and 12 received commercially prepared formulas. Feeding problems in infancy were readily evident in 15 children. A description of these problems is shown in table 6.

TABLE 6: Feeding Problems in Early Infancy

Type of Problem	No. Children
Choking	3
Vomiting or colic	5
Poor intake of milk	7
Total	15

Two children (D. P. and T. H.) continued on junior foods until the age of 18 months, and 1 (R. S.) remained on them until 2 years of age because in all 3 coarser table foods produced vomiting. Two other children (T. W. and R. H.) were not weaned from the bottle until the age of 4 years. One child (A. S.) exhibited milk intolerance during infancy and later developed bronchial asthma.

The other children in the study received strained foods during the first 6 weeks of life, progressed to junior and table foods at the usual times, and were weaned from the bottle by the age of 2.

Present feeding pattern. With the Daily Food Guide as a reference standard of adequacy, present feeding patterns reveal that 32 children are receiving a satisfactory food intake with all the 4 food groups included, while 8 children are receiving an unsatisfactory intake. The diets of these 8 children are characterized by sporadic insufficient caloric intake and absence of green vegetables and milk, with daily fluctuations in the adequacy of the diet.

Of the children who presented problems in early infancy, R. H. continues to eat poorly with inadequate nutrient and caloric intake, and R. S. continues to experience vomiting and choking.

Based on historical and clinical evaluation, only 1 child (H. M.) in our study appeared to be obviously clinically malnourished. This is revealed not only in the daily inadequate diet but also in the physical findings of this child.

Discussion

The 40 children selected for this study were for the most part residents of the Inner City. The Child Development Clinic is located on the main campus of Howard University, in close proximity to the Cardozo, Shaw and Model Cities areas. The Child Development Clinic is a multidisciplinary clinic which was established 4½ years ago for the purpose of diagnosing and treating children with congenital or acquired developmental abnormalities.

Although the referral diagnosis was usually "mental retardation with hyperactivity," upon evaluation by the multidisciplinary staff of the Clinic it was frequently revealed that, although underperforming, these children usually had average or, indeed, higher potentials with evidence of minimal faulty neurologic integration. Various descriptive terms have been given to this condition, e.g., brain damage, minimal cerebral dysfunction, hyperkinetic child syndrome, etc. To avoid semantic confusion we prefer the term "minimal faulty neurologic integration with perceptual disorders."

Children with this particular diagnosis were selected for study because of their similarity in appearance to normal children and because as a diagnostic entity they are being seen in ever-increasing frequency in our Clinic. The majority of children seen in the Child Development Clinic come to us from the Inner City where the conditions of poverty appear to affect both health and intellectual functioning.

In his recent studies Mönckeburg[4] revealed that children with malnutrition frequently come from homes where not only is the intake of food inadequate but where economic pressures also restrict adequate stimulation for mental development. This would certainly appear to be the case with the one child in our study classified as malnourished (H. M.). This child continues to receive inadequate nutrition, and intellectual functioning continues within the borderline range. She falls below the mean value for weight and height, and hemoglobin and hematocrit values are borderline.

Cravioto[5] postulates that an intelligence quotient deficit in malnourished preschool children is regained as nutrition returns to normal, provided the child lives in an adequate environment. This latter provision dooms many children from the slums and ghettos of our urban communities to continued deficient intellectual functioning unless steps are taken to upgrade their total existence.

Our findings support previous studies which express doubt that mild malnutrition is in itself responsible for deficits in anthropometric measurements and intersensory integration scores. Of equal importance is the effect of social and environmental factors on these parameters. When environmental inadequacies and poor nutrition exist together the deficiencies appear to be heightened.

It is postulated that children with faulty neurologic integration show an increased incidence of infantile feeding disorders. At least 37.5 per cent of the children in this study group experienced feeding problems in early infancy. Whether this represents merely coincidence or is of predictive significance bears further investigation. It is a known fact, however, that difficulties in chewing and swallowing are indicative of C.N.S. dysfunction. Eating disorders may be caused by various factors singly or in combination. A possible cause is an environmental situation which creates tension in the infant.[6] In an infant with faulty neurologic integration the potential for creating tension is theoretically greatly increased. A level of stimulation which may be normal for the average infant may be perceived in an exaggerated manner by the affected infant. An unsuspecting mother may interpret the infant's response as rejection, thus creating an environment conducive to the development of early feeding disorders. These disorders may or may not persist. Of the 15 children in our sample who exhibited early feeding disorders only 2 continue to experience such problems.

Summary

Forty children with the diagnosis of minimal faulty neurologic integration from middle and low socioeconomic income homes in the Greater Metropolitan Washington Area were studied to (1) compare the growth status of these children at the time of initial evaluation in the Child Development Clinic with recently published standards for children of Afro-American descent; (2) determine if early or present nutritional patterns could be incriminated in any observed deficiencies in physical and intellectual functioning; and (3) determine if any trends could be cited in the early feeding patterns of these children which might be of predictive or suggestive value in the early diagnosis of minimal faulty neurologic integration.

Only 1 child was found to be clinically malnourished. She was significantly below the mean value for height and weight, and her hemoglobin and hematocrit were in the borderline range, as was her intellectual functioning. Her home environment was by far one of the most impoverished of those studied.

Fifteen children (37.5 per cent) exhibited feeding disorders in early infancy. This occurrence rate appears to be higher than that seen in the general population and bears further investigation as to its predictive value in the early diagnosis of infants with minimal faulty neurologic integration.

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Ovarian-vein Thrombosis: A Postpartum Surgical Emergency

Report of a Case

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POSTPARTUM ovarian-vein thrombosis is a rare entity. Only 12 cases have been reported in the American literature since its initial description in 1958 by Austin. Even less frequently is the patient taken to surgery with ovarian-vein thrombosis as her preoperative diagnosis. In 2 recently reported cases, however, the differential diagnosis did include ovarian-vein thrombosis, which may indicate an increasing awareness of the problem.[1]

Report of Case

The patient, a 19-year-old Negro female, gravida II, Para 1, was admitted to the District of Columbia General Hospital on May 29, 1967. The pregnancy terminated on the day of admission by spontaneous vaginal delivery of a 7 lb., 13¼ oz. male infant after a normal prenatal course.

The immediate postpartum course was uncomplicated. However, on the day following delivery the patient complained of right lower quadrant pain without chills, fever, dysuria, or foul lochia. Neither costovertebral angle tenderness nor calf tenderness was present. On the second postpartum day the patient had an oral temperature of 101.8°F. Now there was bilateral costovertebral and suprapubic tenderness. Broad-spectrum antibiotic therapy was initiated for what appeared to be a urinary-tract infection. On the third postpartum day the patient's condition worsened and there was localization of tenderness to the right lower quadrant with associated rebound phenomenon and abdominal distention.

On the basis of the physical findings and the microscopic pyuria the surgical consultant supported the diagnosis of pyelitis. Antibiotic therapy was changed from the intramuscular to the intravenous route, and on the fifth postpartum day there was significant improvement. On the sixth postpartum day there was recurrence of the right lower quadrant abdominal tenderness and rebound. Additionally, a Rovsing's sign was elicited, and a right lower quadrant mass was palpable for the first time.

Exploratory laparotomy was performed on the sixth postpartum day with a preoperative diagnosis of suppurative appendicitis with perforation and intraperitoneal abscess. The right ovarian vein was found to be involved by a diffuse thrombotic process extending through the right ovarian vein and the inferior vena cava to a level above the renal veins. The left adnexa and venous system on visual inspection and palpation were grossly free of disease. Right salpingo-oöphorectomy and ovarian-vein resection with appendectomy were performed.

Because of the extent of involvement in the inferior vena cava by the thrombotic process intravenous pyelography was performed on the first postoperative day. This revealed good visualization of both calyceal systems, ureters and bladder. Urinary output was maintained above 50 c.c./hr.

Anticoagulants were then started intravenously. On the second and third postoperative days the patient experienced episodes of coughing, productive of blood-tinged sputum. There was tachycardia (100/min.) but no associated dyspnea. Serial electrocardiograms, chest X-ray films, serum enzymes, and bilirubin levels failed to confirm the suspicion of pulmonary embolism.

On the tenth postoperative day an inferior vena cavagram revealed diffuse thrombosis along the entire course of the inferior vena cava. Venous pressure measurements done at the same time revealed normal peripheral pressure, indicating adequate venous return. The pulmonary angiographic phase failed to demonstrate an embolus. After stabilization the patient was discharged and maintained for 6 months postoperatively on oral anticoagulants.

Discussion

Virchow lists 3 criteria for thrombus formation: alterations in the vessel wall, alterations in the blood itself of either micro- or macrocellular nature, and stasis. In 100 cases at postmortem study McLachlin was unable to demonstrate vessel-wall damage in the peripheral vessels at the site of incipient thrombi. The last 2 of Virchow's criteria are readily fulfilled in the postpartum female. Numerous hematologic studies have demonstrated a state of hypercoagulability in the pregnant and puerperal female.[2] Fibrinogen, quantity and adhesiveness of platelets, proconvertin (factor VII), and factors IX and X have all been demonstrated to be elevated in the postpartum state. The last of Virchow's criteria was demonstrated by the venous-pressure measurements which showed practically no flow in the puerperium. Hodgkinson demonstrated an increase in size of the ovarian vascular pedicle from 9 mm. to 26 mm. at term, which represented a 60-fold volumetric increase.[3]

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Ovarian-vein thrombosis would appear to have a predilection for the right side. However, left-sided thrombosis and bilateral involvement have been reported. Frequently described symptoms are lower quadrant pain, nausea, vomiting, and flank pain. Physical findings include lower quadrant tenderness, costovertebral angle tenderness, abdominal distention, temperature elevation, and a palpable abdominal mass.

The process appears to occur most commonly in the first 2 to 4 days postpartum without regard to prenatal course, gravidity, parity, duration, difficulty of labor, method of delivery, age, or race. In 8 of the reported cases (present case included) a mass has been palpated either abdominally or vaginally.

Patients may present signs and symptoms of an acute surgical abdomen, frequently with pain, nausea, vomiting, and abdominal distention. Rather marked costovertebral angle tenderness associated with fever may be accompanied by signs and symptoms of urinary-tract infection. Since many puerperal women may appear to have pyelitis, attempts to rule this out must be vigorous. Eastman[3] stated that postpartum pyelitis represents a true diagnostic problem to the obstetrician. Since pus cells may be found in the urine of normal puerpera, the criteria for diagnosing puerperal pyelitis must include, in addition to an elevated temperature and typical physical findings, the presence of at least 50 pus cells per high-power field.

In our case intravenous pyelography showed right-sided calyceetasis and ureteral obstruction. Anatomically the ureter is crossed by the ovarian vessels at approximately the level of the pelvic brim, thus lying between these vessels and the psoas muscle.[4] Ureteral obstruction at this level by a dilated thrombosed vessel could readily explain a urinary-tract complication. The dermatomes corresponding to ureteral innervation, namely T_{11}, T_{12}, and L_1 explain the lower-quadrant symptoms. Thus, intravenous and retrograde pyelography may be most important in confirming a suspicion of ovarian-vein thrombosis.

In the cases reviewed appendicitis was usually the most common preoperative diagnosis (7 of 13 cases).[1, 5, 6, 7] A diagnosis of appendicitis in the pre- and postpartum woman will give a decreasing yield of positive returns from conception through the puerperium. In his series of 375 cases of appendicitis occurring in pregnant and puerperal women, Black's figures showed 35 per cent to occur in the first trimester, 34 per cent in the second, 27 per cent in the third, 1.7 per cent during labor, and 2.3 per cent in the puerperium.[2] The examiner must take into account not only displacement of abdominal viscera but the fact of the normally tender uterus after delivery.

In doubtful cases Adler's test may allow the physician to reach a conclusion. The test consists simply of placing a fingertip over the point of maximal tenderness and while maintaining pressure rotating the patient to the left. Pain of uterine or adnexal origin should diminish or disappear while that of extrauterine origin should persist.[2]

Treatment of all cases described to date has been surgical and has varied from simple ligation of the ovarian vein on the involved side to excision of both veins and adnexa combined with ligation of the inferior vena cava. In the majority of the cases anticoagulants were used postoperatively. The need for removal of the involved adnexa exists only in instances in which infarction is present, since the ovarian vein may be ligated without danger to the gonad because of adequate cross-circulation.

Vena caval ligation alone or in conjunction with either ligation or excision of the involved vein is done with the idea of preventing pulmonary embolization. This procedure has been advocated most often as the procedure of choice. Only 1 case of documented pulmonary embolization was reported in the 13 cases reviewed. Although this occurred in a patient with caval ligation, careful questioning left little doubt that the event occurred preoperatively. Even so, the incidence of pulmonary embolization was less than 10 per cent despite the massive size of the thrombi that were found. This may reflect the adherence of these thrombi to the vessel wall.

The addition of anticoagulation to the therapy is solely for the prevention or further propagation of existing thrombi or the formation of future thrombi. The anticoagulants have no effect on the lysis of clot already present. The anticoagulant routine of choice on this surgical service is the use of heparin by intravenous injection followed after 7 or 8 days by oral maintenance therapy.

Lysis of the thrombi may occur either spontaneously or with the aid of proteolytic measures. Spontaneous lysis of thrombi represents only a stage of the normal coagulation phenomenon.

In view of the low incidence of pulmonary embolization reported to date, it would appear that surgery need not be the treatment of choice in the accurately diagnosed case. As the thrombolytic agents come more into clinical use, they may represent the therapy of choice in this and other thromboembolic phenomena. However, when a questionable diagnosis prevails, exploratory surgery is the treatment of choice. The mortality and morbidity of missed appendicitis alone warrant exploratory surgery.

Summary

The case of a 4-day postpartum woman with ovarian-vein thrombosis has been reported. Twelve previous cases have been reported to date. Diagnosis requires a high index of suspicion and the exclusion of appendicitis and pyelitis. Treatment to date has been surgical. Although anticoagulants now remain an important part of the management, the thrombolytic agents hold promise.

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Pulmonary Lesions Encountered during the Vietnam Conflict*

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THERE IS CONSIDERABLE confusion in the literature and among physicians when discussing and administering to patients with the various forms of postoperative respiratory insufficiency. This paper will attempt to define the various pulmonary lesions seen in a combat situation, including clinical histories and autopsy protocols of patients treated at the Naval Support Activity Hospital at DaNang, Republic of Vietnam, during a 1-year period, from May 1967 through May 1968. At some time in the course of hospitalization these patients were all diagnosed as having "wet lung." It is a common occurrence for surgeons and other physicians to assign the term "wet lung" to any postoperative respiratory insufficiency state regardless of etiology. For the sake of clarity, let us take a look at the various lung lesions and attempt to describe them.

The first category of respiratory insufficiency and one of the most puzzling and the catch-all category is the "wet lung."

"Wet lung" and "traumatic wet lung" are terms used to denote the accumulation of fluid in the lungs following accidental or operative trauma. This fluid may consist of blood, transudates, and/or exudates in any combination. The term pulmonary edema is often used loosely to describe this picture. Edema in a strict sense implies an increase in interstitial fluid, but, as applied to the lungs, it indicates the accumulation of pulmonary transudates within the air passages. "Wet lungs" of any description are primary obstacles to recovery. Treatment was of particular concern in the Korean conflict. The mechanism by which "wet lung" is produced is poorly understood. When one reads the results of the Commander-in-Chief's Pacific Second Conference on War Surgery, held 25–28 March, 1968, at Baguio, Philippines, he cannot help but feel that the etiology of this entity is still obscure. There is mention of the possibility of overtransfusion as a significant factor superimposed upon parenchymal pulmonary trauma, or upon a lung which has suffered the results of aspiration. The report goes on to say that there was not full agreement on these points by the conference attendees. This report lists, as did last year's report, 6 factors in the etiology of this entity:

1. Ten or more units of blood had been transfused.
2. Most of the patients had been in a state of severe shock for an unknown period of time.
3. Most had a good renal output with adequate specific gravity.
4. The arterial pH was unknown and the patient had generally received sodium bicarbonate in large quantities.
5. Initially the chest X-ray film was normal.
6. Central venous pressures when monitored were frequently found to be normal or below normal.

Physicians who have endeavored to treat respiratory insufficiency syndromes know that these factors characterize a large number of patients and, yet, the "wet lung," or for want of a descriptive term, "postoperative respiratory insufficiency syndrome," does not occur in all patients exhibiting these characteristics.

Rollin A. Daniel and William Cate[1] of Vanderbilt University were drawn to the problem of "wet lung" in 1947. They produced trauma to the chests of anesthetized mongrel dogs and concluded:

1. "Traumatic wet lung" was produced experimentally by blunt trauma and tangential bullet wounds to the thoracic cage.
2. Infusions of isotonic sodium chloride in amounts which had little effect on the lungs of normal animals were found to intensify the pulmonary wetness which followed experimental thoracic trauma.
3. "Wet lung" was also produced in dogs breathing low concentrations of oxygen by the infusion

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* Read before the American Society of Anesthesiologists at its meeting in Washington, D. C. in October 1968.

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of normal saline solution but was not produced by hypoxia alone.

4. Their studies on peripheral venous pressures, arterial oxygen saturations, hematocrits, and pulse rates had not revealed variations of enough significance to explain the occurrence of generalized "wet lung" associated with localized areas of pulmonary injury.

They also found that the outpouring of fluid was just as intense in areas of the lung fields in which there was gross evidence of trauma. In later experiences involving dogs which had been subjected first to dorsal sympathectomy and then to blunt lung trauma they noted a decreased incidence of "wet lung." They concluded that a reflex mechanism existed which played a role in the generalized "wet lung" which followed thoracic trauma. In the dog, at least, the removal of a large portion of the sympathetic supply to the lungs tended to prevent the edema. Whether these reflexes inciting the edema had their greatest effect upon pulmonary blood vessels, bronchi, or bronchioles was not known to them.

What effect producing a thoracic sympathetic block would have on the morbidity and mortality of "wet lung" as it is currently seen remains to be evaluated. Since effective block of the thoracic sympathetics often occurs in the thoracic area during paravertebral thoracic somatic nerve block, this might be one of the blocks employed. Continuous lumbar epidural anesthesia might be another block. It must be concluded, however, that before a regimen of effective therapy can be instituted more work on the etiology of this clinical syndrome must be done.

Other lung syndromes seen in extremely traumatized patients included "blast lung." This is thought to be due to direct high velocity trauma to the lungs. There are varying degrees of contusion of lung parenchyma caused by missiles passing through or close to the lungs. As a variant of "blast lung" we saw patients hit not by missiles but by explosives such as booby traps or grenades. The force wave generated by explosives, according to Zuckerman,[2] lasts on the order of 6 milliseconds, and with a 70-pound charge it may produce 20 atmospheres of pressure next to the explosive and 2 to 3 atmospheres' pressure at 50 feet from the explosive. It has been suggested and is probably correct that the direct transmission of the pressure wave through the thoracic wall produces the lesion. With respect to the human lesion secondary to high explosives Dean[3] reported that diaphragmatic paralysis commonly occurs, symptoms did not appear until between the second and fifth day, only a few showed obvious X-ray changes, and most showed only a slight decrease in radiopacity in the lung fields.

The other lung lesion seen was that which follows hemorrhage. Moon[4] stated some 30 years ago: "It is a unique paradox that shock simulates exsanguination clinically while its pathologic features resemble those of passive congestion. The similarity to passive congestion accounts for the failure of pathologists to recognize the visceral changes of shock." Keller et al[5] from Tulane focused attention on the lungs in shock in 1967. They measured pulmonary dynamics in shocked dogs. During the period of hypovolemia, the pulmonary arterial and venous pressures and the pressure in the femoral artery, as well as in the left atrium, decreased. The total pulmonary vascular resistance and the pulmonary venous resistance increased during hypovolemia but returned to control levels after transfusion. In 3 dogs who developed lesions in more than 14 per cent of the lungs, however, pulmonary venous resistance increased after transfusion. Pulmonary arterial and left atrial pressures did not differ significantly from those of controls. After transfusion they described a lesion characterized by patchy congestion and dilatation of the capillaries. With further progression the alveolar walls became thickened and encroached on the adjacent alveoli, which contained exudates with red blood cells. Advanced lesions showed interstitial edema, hemorrhages, and perivascular and peribronchial edematous cuffing. The hemorrhagic areas ranged from 2 cm. to the entire lobe of the inflated lung. They resembled lesions previously described in subjects with endotoxin shock, hemorrhagic shock treated by transfusion, hyperbaric oxygenation, toxicity, hypobaric conditions, hyperbaric oxygen toxicity, excessive infusion of fluids, and cardiopulmonary bypass. They concluded that congestive lesions of the lung were directly related to changes in the pulmonary veins and that decreased outflow of blood from the lungs leads to acute, patchy, congestive lesions of the lungs.

Another class of lesions seen resulted from embolic phenomena, usually from fat embolism but occasionally from thrombi. The prognosis in patients with fat embolism was mixed. We had numbers of these patients who recovered. The following case represents a patient who failed to recover.

Illustrative Case

The patient was a 20-year-old Caucasian male (Pfc., U.S.M.C.) who was admitted to the hospital on

January 6, 1968 at 1 a.m. He had sustained a traumatic amputation of the left leg below the knee, severe soft-tissue injury of the right anterior compartments of the thigh and leg, open fracture of the right patella, and shrapnel wounds of the right hand. The nerves and vessels were intact to the lower extremities, and there were superficial lacerations of the scrotum. At surgery, the left knee joint was disarticulated, the fracture of the right patella stabilized, and débridement of the anterior compartment of the right thigh and leg performed. The initial blood pressure was 170/0, the pulse rate 140, and the central venous pressure, 0. The patient was hyperventilating, cold, sweaty, and exhibiting lip and finger cyanosis. The admission blood gases were: pH 7.395, pO_2 62, pCO_2 41, O_2 saturation 91.3, and HCT 35.5 per cent. During surgery these were: pH 7.370, pCO_2 39.5, pO_2 44, bicarbonate 23, and O_2 saturation 82 per cent. At approximately 5 a.m. on January 6 the patient became pale, cyanotic, and nonresponsive. He had been lucid and responsive postoperatively. The blood pressure fell to 92; the HCT was 39 per cent. The pO_2 was 33 with a pCO_2 of 63 per cent. A nasotracheal tube was inserted. A chest X-ray film revealed bilateral infiltrates. An electrocardiogram was nonspecific. The pupils were reactive to light. There were bilateral rales in the chest, and the abdomen was normal. It was thought that the patient had sustained a fat embolization to the central nervous system and the lungs. When the patient was taken off oxygen with the IPPB, the cerebral function deteriorated dramatically, with the patient changing from purposeful movements of both extremities to decorticate posture. On January 7 on IPPB the blood gases were as follows: pH 7.405, pO_2 50, pCO_2 28.5, bicarbonate 19, and O_2 saturation 84.5. A coagulation time was 18 minutes and 30 seconds. The vital signs were: blood pressure 130/72, pulse rate 120, and HCT 36. The urinary output remained steady at 75 c.c. per hour. The CVP was still 0. The blood gases at 7 a.m. on January 7 were pH 7.34, pO_2 70, pCO_2 31, bicarbonate 23, and O_2 saturation 94. The pupils continued to react to light. On this date the patient's respiration was controlled. The temperature had risen to 102°F, and the blood pressure remained elevated at 160–180 systolic. An ECG revealed right-heart strain. The blood gases at 7:50 p.m. on January 7 were pH 7.520, pO_2 56, pCO_2 29.5, HCO_3 25, and O_2 saturation 91 per cent. At 11:00 p.m. there was some improvement of the blood gases with an O_2 saturation of 96.8 and pO_2 of 82. The serum potassium was 4.0 mEq./l. The chest remained clear. On January 9 split thickness skin grafts were applied to the right anterior thigh from sites on both thighs and the abdomen. On January 10 the urinary output diminished markedly. The urine specific gravity was 1.030, the blood pH 7.575, pCO_2 30, and pO_2 180. The urinary output dropped to 5 c.c. per hour, and the CVP was 2.0. The patient at this point was given mannitol and digitalized. At 6:15 p.m. the blood pressure dropped to 70/0, and the urine output was 0. The CVP had climbed to 8. On January 10 at 11:15 p.m. the patient was pronounced dead.

The lungs at autopsy revealed the following: The combined weight of the lungs was 3,600 Gm. A dissection of the main pulmonary arteries revealed no thromboemboli; however, on closer examination the smaller branches of the pulmonary arteries revealed multiple small adherent well-organized thromboemboli. The visceral-pleural surface of the lungs was smooth and glistening. The lungs were extremely firm, and their color was bluish purple throughout. A few aerated areas were discernible. There was a 2 by 2 cm. firm right peribronchial lymph node. On cross section the lymph node was seen to be replaced with firm, yellowish material. A peripheral granuloma was not found, but it was thought that this node was a part of the Ghon complex. The tracheal bronchial tree was opened and the mucosa found denuded. The submucosa was hyperemic and congested. The right main-stem bronchus contained fibropurulent material; however, the left main stem bronchus did not show denuding of the mucosa but was merely hyperemic. On cross section of the lungs, besides the aforementioned thromboemboli noted in the smaller vessels, the lungs were markedly congested, and there was a free ooze of bloody fluid from the exposed surface. There were no nodular infiltrates which would be consistent with bronchial pneumonia.

Discussion

These, then, were some of the lesions encountered clinically in a 1-year period. Treatment was directed toward relieving the respiratory insufficiency in all instances. Liberal use was made of laboratory methods, including blood-gas analysis, chest tubes where applicable, oxygen in an attempt to maintain satisfactory pO_2s, and assisted or controlled ventilation with or without curarization. Results in patients with advanced lesions were routinely disappointing. Vital signs, CVPs, urine output, and other clinical parameters were monitored routinely. Sedation was accomplished, if indicated, by using small amounts of narcotics. Chest X-ray films were taken daily or as indicated.

Summary

Further work is needed in classifying the various pulmonary lesions as they occur clinically. Although treatment varies little, too often a diagnosis of "wet lung" is made, this tending to be a catch-all diagnosis used loosely by surgeons and other physicians. Responsibility for the patient's condition is placed upon the anesthesiologists because they consider overtransfusion as the sole etiology of the syndrome. It is evident that a variety of lung lesions are seen following injury and that overtransfusion may be but one of a host of etiologic agents.

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Observations on Etiological Aspects of Neonatal Jaundice in Negro Infants

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In recent years attention has been focused on an association between red blood cell, glucose 6-phosphate dehydrogenase (G6PD) deficiency in the Negro newborn and neonatal hyperbilirubinemia.[1] Since 1969 we have routinely screened all of our newborns for G6PD activity as well as for amino acidopathies. Thus, the opportunity arose to study the relationship between hyperbilirubinemia and G6PD deficiency in the Negro. We were also interested in studying other causes of neonatal hyperbilirubinemia in these infants.

Method and Material

All newborn infants from August 1, 1967 to July 31, 1968 were studied. Newborn infants who developed clinical jaundice and who had total serum bilirubin of 7 mg./100 ml. or more were included in this study. The workup included a complete hemogram and reticulocyte count, peripheral blood smear, serum bilirubin, blood grouping, and Rh typing on the mother and baby. A Coombs' test, direct and indirect, serologic test for syphilis, and blood cultures were performed.

G6PD activity was determined on all infants 2 to 3 days of age by a screening method[2] adapted from a procedure for detecting galactose-1-phosphate uridyl transferase activity.[3] In this screening method the hemoglobin level has no effect on the enzyme activity. Those infants with deficient G6PD activity were recalled and the enzyme activity determined on a fresh blood specimen by a quantitative spectrophotometric method.[4] Normal values for G6PD activity were taken as 4.4 to 6.8 units/Gm. of hemoglobin. Direct and indirect bilirubin was determined by an auto-analyzer method adapted from the manual method of Jendrassik and Grof.[5]

Results

There were 1,978 live births during the study period. Thirty-six infants exhibited neonatal jaundice (bilirubin greater than 7 mg./100 ml.). Twelve of the icteric infants were in the low birthweight category (birth weights ranged from 1,276 to 2,495 Gm.). Nine had erythroblastosis fetalis due to ABO incompatibility. There were no cases of Rh disease. The time of appearance of jaundice ranged from 8 to 119 hours. The bilirubin level at the time of appearance of icterus showed a mean of 13.2 mg./100 ml. The indirect bilirubin level in 10 of 36 babies rose sufficiently (above 20 mg./100 ml. blood) to require an exchange transfusion. Five of the 10 exchange transfusions were performed for the treatment of erythroblastosis fetalis. In one case the cause of jaundice was attributed to the presence of a large cephalohematoma. All the blood cultures were negative.

During the study period 109 infants exhibited G6PD deficiency. This group consisted of 80 males and 29 females. There were no cases of jaundice in the prematures with low levels of G6PD. Four full-term babies with G6PD deficiency showed jaundice (table 1).

Discussion

An association between erythrocyte G6PD deficiency and neonatal hyperbilirubinemia is well recognized among certain ethnic groups, especially the Greek and Chinese.[6, 7] Studies of American full-term Negro infants by Wolff et al[8] and O'Flynn and Hsia[9] have failed to disclose any such relationship. A study by Eshaghpour, Oski and Williams[10] showed that G6PD deficiency in Negro premature infants in the United States is associated with an increased risk of hyperbilirubinemia. In our series the 109 babies with low G6PD were all Negro. Twelve of the 109 were classified as prematures, and none had serum bilirubin levels above 7 mg./100 ml. Of 4 full-term newborns with jaundice and G6PD deficiency, 2 had erythroblastosis fetalis due to ABO incompatibility with positive Coombs' tests. The remaining 2 had negative

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TABLE 1: Summary of Data on Jaundiced Babies with Low G6PD

Patient	Birth Weight (Gm.)	Sex	Blood Type		Coombs' Reaction	Bilirubin		Time of Appearance of Jaundice (hours)	G6PD (units)
			Mother	Baby		Total (mg./100 ml.)	Direct (mg./100 ml.)		
No. 1	2,495	M	O+	B+	Pos.	12.2	0.9	38½	0.3
No. 2	2,835	M	O+	A+	Pos.	17.0	1.0	24	3.0
No. 3	3,175	M	B+	O+	Neg.	19.5	1.0	72	0.1
No. 4	3,090	M	—	B+	Neg.	10.9	0.8	54	3.2

Coombs' tests and the jaundice was presumably of the so-called physiologic type. To date our data indicate that G6PD deficiency per se does not result in hyperbilirubinemia in Negro premature infants.

Summary

Jaundiced newborn Negro infants born in 1 year were studied. There were 36 cases of neonatal jaundice. Twelve of these were premature infants. Twenty-five per cent of all cases of icterus were attributed to ABO incompatibility. There were no cases of jaundice due to Rh disease. G6PD deficiency was detected in 109 infants. Twelve of these were low birth-weight babies but none developed icterus (serum bilirubin greater than 7 mg./100 ml. blood). In our series G6PD deficiency in Negro premature infants was not associated with significant hyperbilirubinemia.

Mrs. Patricia A. Davis provided technical laboratory assistance. Dr. Roland B. Scott gave helpful advice in the preparation of the manuscript.

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President's Page

PEER REVIEW

We frequently read or hear that the medical profession refuses to discipline itself, i.e., "police" our members actively, correct breaches of ethics, or insist on proper standards in the practice of medicine.

It should be understood tha the medical profession, that is the Medical Society, does not grant a medical license and therefore cannot revoke it. Yes, one does ponder the role the profession must take to correct problems incurred by its members. We must keep in perspective the fact that since licenses are granted by the "State," legal entanglements may occur when any Society enters the disciplinary area.

Our Medical Society, as most others, has committees actively engaged in the above problems. The Committee on Medical Ethics and Professional Conduct was created to discuss and recommend action regarding a breach of medical ethics; the Grievance Committee, to discuss and recommend action regarding standards of practice of physicians; the Fee Review Committee, to discuss and recommend the reasonableness of fees charged by physicians as they relate to this medical community; the Utilization Committee, to discuss and recommend actions regarding utilization of services in the delivery of health care.

The Committee on Medical Ethics and the Grievance Committee have been in action long enough for all physicians to recognize and appreciate their purposes. The Fee Review and the Utilization Committees are of more recent origin and came into being to answer questions relating to cost, utilization, and quality of medical care.

Anyone reading the newspapers, medical journals, etc., easily understands that if the medical profession does not "police" itself it will be done by others—the public, the politicians, and the Government. No profession wishes interference from those who lack an understanding of the problems involved.

To quote from the report of the staff to the Committee on Finance, United States Senate, re Medicare and Medicaid: Problems, Issues and Alternatives: "The KEY to making the present system workable and acceptable is the physician and his medical society." To continue:

"While there is growing awareness among many physicians of the need for the profession to effectively police and discipline itself, performance has been spotty and isolated so far. Prompt action is necessary by organized medicine (and other health professions) to do what is required with respect to monitoring care provided and charges made for the care. In the absence of such constructive effort, we fear that virtually insurmountable pressures will develop for alternative control procedures which may be arbitrary, rigid and insensitive to the legitimate needs of both the patient and his physician."

There is no intention here to say that we should be frightened by statements published, but we should be cognizant of present-day thinking and practical and flexible enough to meet the challenges.

The Fee Review Committee of the D. C. Medical Society receives requests from insurance carriers to review fees of member physicians which are considered above the "usual, customary or reasonable" level. This Committee, composed entirely of physicians, who represent various sections of the D. C. Medical Society, studies all aspects of the case. Physicians engaged in the same category of health care do the initial study and present their findings and recommendations to the full Committee. These final recommendations, transmitted to the insurance carriers, are not binding and may be appealed. This Committee meets monthly, reviews about 10 to 12 cases per month, and, to its credit, seldom has there been dissatisfaction expressed on its recommendations.

The Utilization Committee of the D. C. Medical Society receives requests from insurance carriers and the D. C. Health Department to review utilization of services and fees charged relating primarily to the Medicare and Medicaid programs. Only 2 cases have been referred in the past 6 months. These have been given extensive study, and the final recommendations submitted, I am sure, have been fair to all involved. We have been in close contact with the authorities involved in the Medicare and Medicaid programs, and we have been assured that in the District of Columbia the problems have been minor.

Your committees will continue to be diligent and will do their utmost to see that all physicians in this Society function responsibly in dealing with health-care delivery. Your assistance is a most necessary ingredient for a successful operation.

Frank S. Pellegrini

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Bean with Bacon	6.8	Green Pea with Ham (Frozen)	7.6
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These established therapeutic actions make Pro-Banthīne particularl useful in:

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- diverticulitis
- irritable colon
- biliary dyskinesia
- functional hypermotility

We wish to thank Drs. Marcia K. Bilbao, Louis H Frische, Josef Rösch and Charles T. Dotter for this exceptionally graphic example of hypotonic duodenograph

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Contraindications: Glaucoma, severe cardiac disease.

Precautions: Since varying degrees of urinary hesitancy may occur in elderly men with prostatic hypertrophy, this should be watched for in such patients until they have gained some experience with the drug. Although never reported, theoretically a curare-like action may occur with possible loss of voluntary muscle control. Such patients should receive prompt and continuing artificial respiration until the drug effect has been exhausted.

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Dosage: The maximal dosage tolerated without excessive side effects is usually the mo effective. For most adult patients this will b four to six 15-mg. tablets daily in divide doses. In severe conditions as many as tw 15-mg. tablets four to six times daily may b required. Pro-Banthīne (brand of propantheline bromide) is supplied as tablets 15 mg., as prolonged-acting tablets of mg. and, for parenteral use, as serum-ty vials of 30 mg. The parenteral dose shou be adjusted to the patient's requirement a may be up to 30 mg. or more every six hou intramuscularly or intravenously.

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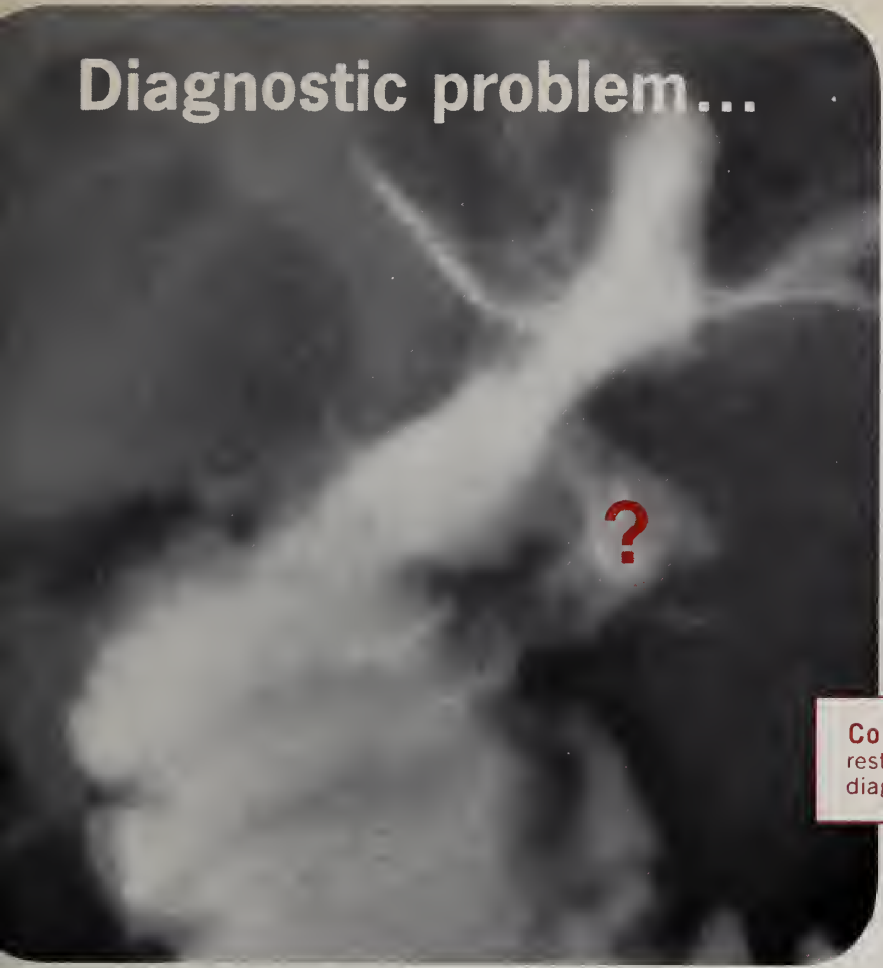
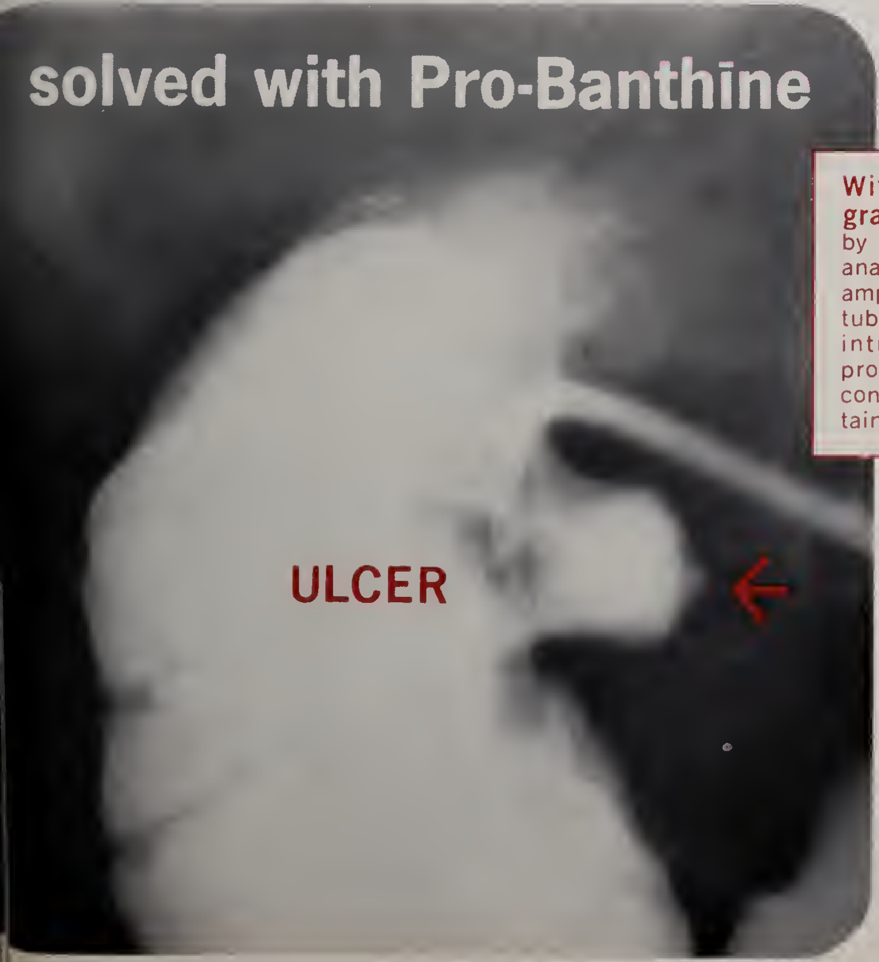


Conventional x-rays of the restless duodenum are often diagnostically indefinite.

solved with Pro-Banthīne



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Editorials

The Sixth Howard University Number

Dr. Wallace M. Yater, with 38 years of continuous service at the helm of the Medical Annals of the District of Columbia, is the senior editor of the country's state medical journals. The annual dinners of the Editorial Board which he has sponsored have produced many fruitful suggestions for enhancing the quality and influence of the Annals. None has been more significant than the proposal of Dr. Herbert P. Ramsey, adopted in 1957, that a consulting editor be added to the Board for each of the medical institutions in the Metropolitan Area. These representatives were appointed by their respective institutions, and a wider interest in and sense of responsibility for the Annals were so induced. In the following year, 1958, Dr. Thomas M. Peery proposed that a series of special issues be inaugurated in which each institution would furnish the papers for the number bearing its name. This project has proved very successful. The list of institutions included has grown larger for each series, and now the sixth rotation has begun. The consulting editors and the special institutional numbers have thus been a unifying and cohesive force in the Washington medical community.

Howard University enjoyed the honor of contributing the papers for the first special issue in the series for March 1959. Now that its turn has come for the sixth time,* a few comments may be appropriate on certain special values inherent in Howard's identification with the Annals in this series.

Dr. Daniel Smith Lamb (1843–1929) was at once a pillar of the Medical Society of the District of Columbia and of the Howard Medical School. He was further linked to the local scene through his medical degree from Georgetown ('97) and his service as pathologist to the Army Medical Museum, now the Armed Forces Institute of Pathology (1892–1920). He initiated and was editor of the Washington Medical Annals, from 1902 to 1920, as the official organ of the Medical Society. At Howard University he was a member of the medical faculty for 50 years, serving as Professor of Anatomy for 46 years, from 1877 to 1923. It was my privilege to succeed in 1947 to the Howard chair held by Dr. Lamb, and his academic hood, donated by the family, still hangs framed in the office of the Chairman of the Department of Anatomy.

In 1870 an emotion-charged and well-documented controversy raged around the admission of Negro physicians to the Medical Society of the District of Columbia which reached the convention of the American Medical Association and the halls of Congress. The racial barrier stood and was not removed until 82 years later, in 1952. Throughout the heat of the 1870 controversy Dr. Lamb kept his "cool" and continued to be held in the highest respect by both the Medical Society and Howard.

In that day some white physicians were socially ostracized for affiliating with Howard, but Dr. Lamb remained untouchable. In 1895 he was one of the founding members of the Medico-Chirurgical Society of the District of Columbia, formed to secure for Afro-American physicians "the advantages of regular meetings for medical improvement," and in 1901 he became President of the Medical Society of the District of Columbia. Dr. Lamb also was historian for both the Medical Society and Howard. "Lamb's History" of the Society, covering the period 1817–1909, "will abide as a monumental testimonial to his memory for the labor and service rendered by him in behalf of the Society."† His handsomely bound 310-page history, "Howard University Medical

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* Other Howard Numbers have been: second, April 1961; third, November 1963; fourth, January 1966; and fifth, November 1967.

† Nichols, J. B., and others: History of the Medical Society of the District of Columbia, Part II, 1833–1944, page 164.

Opinions expressed in contributions to the Editorial Section are those of the writers and do not necessarily reflect the views of the Medical Society of the District of Columbia

Department," published in 1900, is another splendid tribute to his scholarship and labor and is still a primary source book. It chanced that the present writer not only followed Dr. Lamb in anatomy but also in historical interests and endeavors, so that in his own "The First Negro Medical Society," published in 1939, it was possible both to present what Nichols called "the contrary side of the story" of the controversy and to pay tribute to Dr. Lamb's contributions.

His liberality in behalf of women in the medical profession was equally courageous at the time. The Women's Medical Society of Washington formally acknowledged that "Dr. Lamb was responsible in large measure for our admission into the Medical Society of the District of Columbia." The doors of Howard Medical School were always open to women, and one of the charges against Howard in the controversy of 1870 was that it had a woman on its faculty. Dr. Lamb's second wife, Dr. Isabel Haslup Lamb, was a medical graduate of Howard in the Class of '97.

When the negotiations for the admission of Afro-American physicians to the Medical Society were reopened in 1949 by the Medico-Chirurgical Society, it was against the background of ties provided by Dr. Lamb and others, like Dr. Robert Reyburn, as well as the trend of the times. The process took 3 long years, but when the end was finally achieved there were no reservations on any side and subsequent progress has been made in peace and amity.* Howard's problems at the present time are more within than without. As she takes her regular turn for her sixth special issue of the ANNALS, it is with a sense of having been a co-participant with leaders of the Medical Society and the ANNALS in respect to vital issues of the past and with an eye on the future, for the rough road traveled will never have to be trod again.

W. MONTAGUE COBB, M.D.
Consulting Editor, Medical Annals of the District of Columbia

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* See "An Historic decision." Med. Ann. D.C., 1952, **21**, 510; also, "Medical Society of the District of Columbia to admit Negro physicians." J. Nat. Med. Ass., 1952, **44**, 389.

New Study of Breast Cancer

BREAST CANCER is by far the most common cancer in women and accounts for over 27,000 deaths annually in the United States alone. That there is vast room for improvement in the clinical management of this disease is evident when it is realized that only about 50 per cent of all women who develop this cancer will survive for a 5-year period. Although the efficient control of breast cancer awaits the discovery of presently unknown biologic factors in the development of these tumors, nevertheless, improvements can be made in survival by better utilization of currently available knowledge.

The Medical Society of the District of Columbia, supported by a grant from the American Cancer Society, District of Columbia Division, Inc., has begun a study of breast cancer and its management in this community. This investigation of breast cancer is the successor of previous Medical Society studies of gynecologic and colorectal cancers. Ten hospitals are coöperating in the study by making medical records available to the Committee for review. They are: Cafritz Memorial, Columbia, D. C. General, Doctors, Freedmen's, Georgetown University, George Washington University, Providence, Sibley Memorial, and the Washington Hospital Center.

Objectives of the study are to audit the quality of medical management of breast cancer, to enhance professional education in this topic, to increase the awareness of the laity of the breast cancer problem, to establish standards for the pathologic classification of breast cancer in area hospitals, and, finally, to delineate the nature of breast cancer in this community by a tabulation of clinicopathologic data.

The support and coöperation of all physicians are earnestly requested in this important endeavor.

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Problems in Delivery of Health Care*

Perhaps the most pressing situation that we in the medical profession face in the '70's is the solution to the bottleneck in our delivery system of health care. The problems are not insurmountable, and if they can be well delineated or if the proper questions can be posed, it is conceivable that we can come up with right answers. I should like in this brief communication to explore with you some basic ideas.

First, let us limit our discussion to doctor-care, for I believe that despite the rhetoric all good care must flow from this source. So problem number one is, how do we produce more doctors? The individual who decides to spend 4 years in college, 4 years in medical school, and 4 to 6 years in residency training is rare indeed. Many young men and women who are otherwise qualified are not willing to spend that amount of time. Perhaps they also would not be willing to spend long hours caring for patients. The goal of those individuals who subject themselves to the rigor of long years of training is very seldom financial. We have been producing in the main a medically dedicated individual who, however, being human, is subject to change. Now, reducing the time by 2 years in college and 1 year in medical school in the face of expanding knowledge which seems to inundate the best of us may produce more persons with M.D. degrees but not many more doctors who are ready to shoulder the burden of the care of patients.

Another consideration for the production of more doctors is the expanding of medical school facilities. This, I am sure, will increase the number of doctors but only if major financial support is given to most of the students, because I am assuming that they will be drawn from the pool of bright, highly-motivated students whose finances did not previously allow them to contemplate a medical career. As to the others whose applications were initially rejected, there will be some question as to how many can be truly salvaged.

Because of these considerations I must conclude that we are going to have a relative doctor shortage with us for the foreseeable future. If this is true then our efforts to improve the delivery of medical care must be realistically considered only in this framework.

The third problem, and the one no one seems willing to mention, is the predicament of the American doctor in a profit-oriented society.

If he is to be a leader in his community—a man whose advice is to be taken locally or nationally—he must have a voice (lobby or property), which means he must be a leader among the profit-makers. I know some may reject this, calling it simplistic, and propose that the doctor let his voice be heard only through his medical skills. That would indeed be quite naïve, as the AMA lobby and the few scientists who could not work for H.E.W. know. In a recent article by von Hoffman in *The Washington Post* it was reported that an indigent woman was committed to an insane ward on the basis of a 2-minute "touchless exam" for which the doctor accepted $4.00. How can we destroy this profit orientation? One way is to make the doctor a 'kept' citizen by guaranteeing his existence. Of course, a guaranteed existence means a controlled or manipulated one, which is what some people are now quite glibly advocating. The idea is not unworkable, but it is abhorrent when it is relegated to a single group. We should not limit the profits of the "flowers of our Society" while at the same time throwing these individuals as prey to the uncontrolled profit-makers in the plumbing, automobile, and TV-repair industries.

At this point I should like to observe that the profit motive in medicine is disgusting and detrimental to any program advocating unselfish concern for human suffering. Yet in order to change this outlook it should be obvious that nothing short of a change in the economic culture of the Nation will suffice.

The fourth problem, of major import, deals with "private" hospitals and clinics. It would seem at first consideration that hospitals should be so coördinated as to take care of the community needs (in this case alleviation of suffering) in the best and most equitable way possible; but that, indeed, has apparently never merited consideration. D. C. General and Freedmen's Hospitals in this city are de facto for poor black people who must wait endless hours in pain while there are other hospitals in this city whose load in comparison (especially in the emergency and outpatient departments) must be considered trivial. The profit motive is again operational, and

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* Editor's note: Dr. Assevero poses at least 4 questions difficult to answer. I should like our readers to consider them carefully and, hopefully, offer some fresh solutions to these urgent problems.

Drugs Needed for Ecuador

The International Health Committee of the Woman's Auxiliary to the Medical Society of the District of Columbia is collecting drug samples to be distributed through the Red Cross of Ecuador to needy patients of that country under the supervision of qualified physicians. Physicians wishing to dispose of drug samples should contact Dr. Efrain Guerrero, 1924 Eye Street, N.W. (telephone 338-3617) or the Chairman of the Auxiliary Committee, Mrs. W. Robert Perkins, 4015 52nd Street, N.W. (telephone Emerson 3-2192).

indeed in many instances patients are asked to demonstrate their ability to pay before being treated. This is not mentioned regardless of the fact that hospitals are run like businesses—must pay salaries and carry other overhead. The questions are, should they be so run and is "private" an ethically fitting adjective to qualify "hospital"? A recent communication from one of these private hospitals states that it is remunerated only $38.00 by the Government for taking care of a patient whose cost to the hospital is $95.00. The plain economic solution is that the hospital must shut down or the patient be denied care!

It is my hope that solutions to the problems of the delivery of health care will be found in answers to the questions upon which I have focused. Paramedical personnel, Social Security financing, and Government control of medicine are not fruitful avenues to follow for a serendipitous solution.

Victor L. Assevero, M.D.

A Hair-raising Policy Statement from Georgetown

In these days when all the news seems grim, a news release on hair styles from prestigious Georgetown University School of Medicine comes as comic relief or like the first promise of springtime.

In all seriousness, the release gives in detail the results of a survey and study conducted in 1969 with 1,800 questionnaires sent to all students, faculty and house staff members. A joint Faculty-Student Liaison Committee pondered some 557 replies (over 32 per cent response) and, after due deliberation, propounded the following policy statement on the basis of the replies: "A professional person should be neat and clean at all times. Moustaches, beards, long hair and sideburns and other styles are not objectionable in themselves if they match an otherwise good appearance."

"Effect, if any, on patients resulting from the current styles was not judged in the survey because of the difficulty of measuring patient reaction," according to Dean Rose.

The survey was concerned with the desirability of setting up standards of personal appearance; whether long hair, moustaches and sideburns evoked an unfavorable response from patients and faculty; and whether hair styling could have anything to do with student grades.

The need for a reasonable "appearance policy" was favored by 54 per cent of the students and 76 per cent of the house staff and faculty. More students than faculty members thought the hair situation might have an effect "occasionally" on grades. All 3 groups agreed that hair styles "frequently" or "occasionally" resulted in a negative response by the patient when worn by a medical student or house officer, less when worn by a private physician.

The response was generally negative on hair style affecting a person's professional performance. The ratio stood about 5 (students): 2 (faculty) on its effect on professional opportunities for medical students.

Moustaches and sideburns were considered the least offensive, generally speaking. Long sideburns are worn by 44 per cent of the students, 30 per cent of the house staff, and 14 per cent of the faculty. Moustaches appear on 8 per cent of the students, 4 per cent of the house staff, and 6 per cent of the faculty. Long hair adorns 2, 16, and 17 per cent of faculty, house staff, and students, respectively. And Georgetown concludes its 3 pages of statistics on this timely subject by stating that 34 per cent of the students, 54 per cent of the house staff, and 70 per cent of the faculty who answered the survey rejected all 3 modes for themselves.

A. L. E.

Report of the Ad Hoc Colon and Rectal Cancer Study Committee of the Medical Society of the District of Columbia

The Sigmoid Colon and Rectal Cancer Study Committee was formed in April 1966 by the President of the Medical Society with the approval of its Executive Board. The objectives of the Committee were to improve professional education in the diagnosis and treatment of cancer in these sites and also to allow a frank assessment of the quality of patient care. In addition, the Committee was to estimate the effectiveness of education of the laity about cancer symptoms. The activities of the Committee were underwritten by a grant from the American Cancer Society, District of Columbia Division, Inc.

The members of the Committee were selected to give as broad a representation as possible from all area hospitals and also to furnish to the Committee the benefit of the experience of physicians from all pertinent specialties. Surgeons, pathologists, gastroenterologists, internists, radiologists, and proctologists were appointed to the review panel.

Participating hospitals included Cafritz Memorial, Columbia Hospital for Women, D. C. General, Doctors, Freedmen's, Georgetown University, George Washington University, Providence, Sibley Memorial, and The Washington Hospital Center. The initial step taken by the Committee was to write to the President and Executive Board of these hospitals requesting blanket permission to review charts in which a diagnosis of sigmoid colon or rectal cancer was made. All the hospitals gave permission. Although blanket permission to review these charts was obtained from the hospital, no chart was reviewed until permission was also obtained from the private physician.

A professional case-worker abstracted the hospital records of patients with cancer in these sites. Pertinent data were recorded from both clinical and pathologic reports. In addition, the private physician was requested to forward any other additional information, including notes of office visits, which might have been important to the case under discussion. From all these sources a protocol, identified only by a code number, was prepared on each patient. These protocols, numbering about 20 per month, were reviewed and 4 or 5 cases were selected for review by the Committee at each monthly meeting. Selection of cases was based upon apparent delay in diagnosis by the physician or upon the intrinsic educational interest of the case.

A transcript of the case presentation was mailed prior to the meeting to the attending physician and to all other concerned physicians for their corrections. The completed transcript was then mailed to the members of the Committee and to all other physicians who had requested these protocols. Complete anonymity of physician, hospital, and patient was maintained, and the only way in which the identity of the physician could be revealed would be by voluntary participation and commentary at the time of the monthly case meeting. All physicians in the community were invited to attend the meetings.

Statistical Review

The data in this report are based on an analysis of the 613 patients who were reviewed during the period of the Committee's activity from May 1, 1966 through May 1, 1969. These patients had been admitted to the 10 area hospitals previously mentioned. Data abstracted from these cases are presented in the following tabulation.

Age and Sex Distribution

Age Range	Female	Male
20–30 years	5	2
31–40	7	6
41–50	35	24
51–60	71	87
61–70	88	106
71–80	85	49
Over 80	34	14
Total	325	288

There were 516 private patients in the survey and 97 staff patients. In 158 patients with rectal cancer who had definitive surgical treatment, pathologic staging by the Dukes method was performed and is tabulated as follows:

Dukes A	29
Dukes B	78
Dukes C	51

Forty-two cases of rectal cancer could not be staged for a variety of reasons, including refusal of definitive treatment, performance of biopsy only, etc. In addition, 12 patients are not included in this pathologic classification because they had such lesions as sarcoma or carcinoid of the rectum.

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in severe systemic infections—postoperative bacteremia, Gram-negative/staph pneumonias or neonatal sepsis—Kantrex® (kanamycin sulfate) is often indicated before results of customary sensitivity tests can be reported. Clinical response is often seen within 24-48 hours in susceptible infections, with remission soon after.

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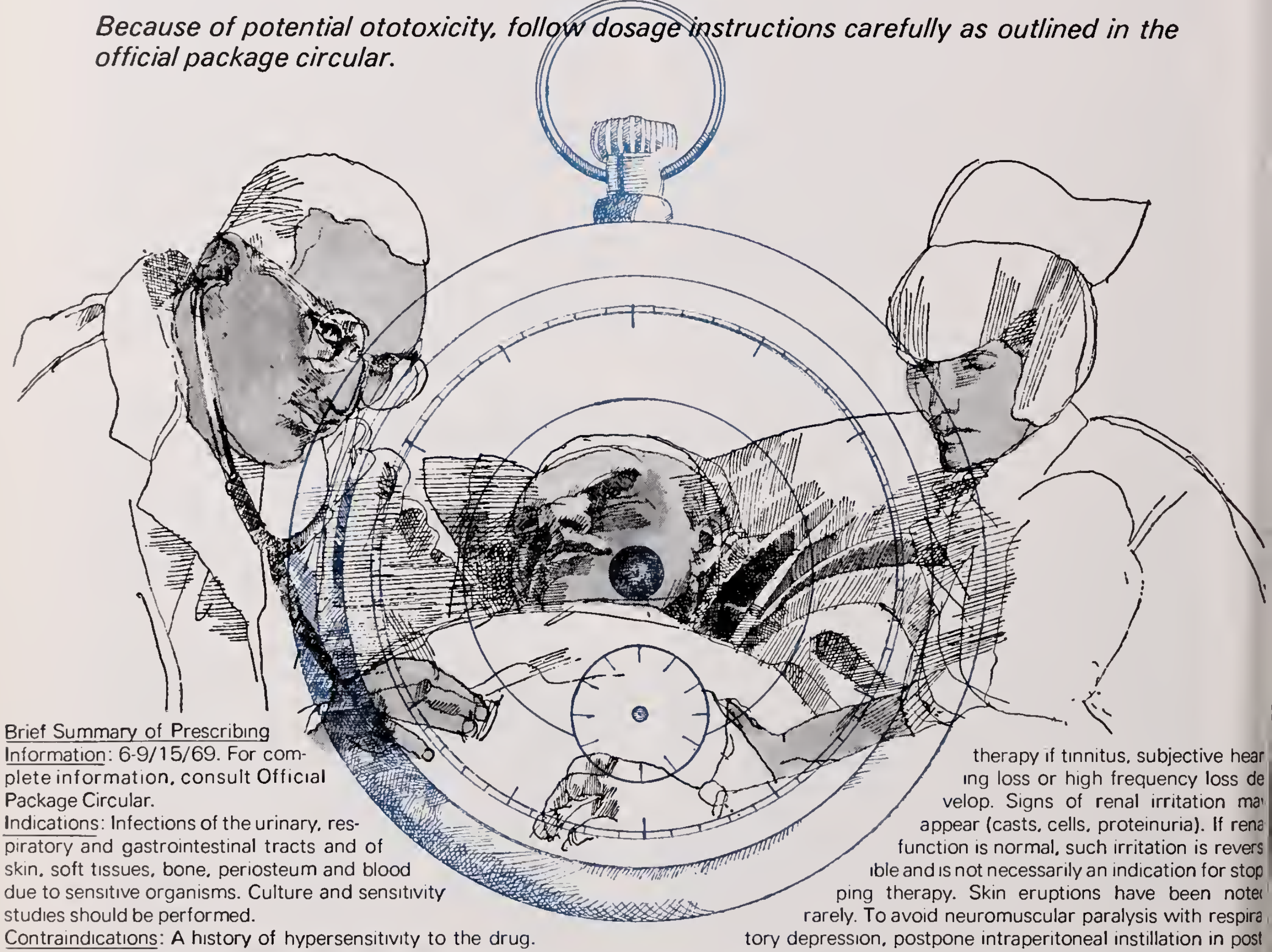

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Indications: Infections of the urinary, respiratory and gastrointestinal tracts and of skin, soft tissues, bone, periosteum and blood due to sensitive organisms. Culture and sensitivity studies should be performed.

Contraindications: A history of hypersensitivity to the drug. Prior auditory damage by kanamycin or other agents may be a contraindication if effective alternative therapy is available.

Warnings: Since the drug is excreted almost entirely by glomerular filtration, renal malfunction can cause abnormally high serum levels of kanamycin which may prove ototoxic. Assess renal function periodically, both before and during therapy. Renal dysfunction or pre-renal azotemia sharply increase the risk of ototoxicity and permanent deafness. In such cases decrease the size and frequency of doses. Discontinue kanamycin and check hearing if azotemia increases. In older patients and patients receiving a total dose in excess of 15 Grams, watch carefully for signs of ototoxicity.

Precautions: If mycotic or bacterial superinfection occurs, discontinue kanamycin and initiate appropriate therapy. Cumulative ototoxic effects may be produced by concurrent or consecutive use of other ototoxic drugs. High doses may cause irritation at injection sites. The drug *should not* be physically mixed with other antimicrobials.

Adverse Reactions: Severe irreversible hearing loss may occur. Stop therapy if tinnitus, subjective hearing loss or high frequency loss develop. Signs of renal irritation ma appear (casts, cells, proteinuria). If rena function is normal, such irritation is reversible and is not necessarily an indication for stopping therapy. Skin eruptions have been note rarely. To avoid neuromuscular paralysis with respiratory depression, postpone intraperitoneal instillation in postoperative patients until recovery from anesthesia and muscle relaxant is complete.

Dosage and Administration: The usual dose is 7.5 mg./Kg./12 hour I.M. The average adult dose is 1 Gram daily and should not exceed 1. Gram even in the heaviest patients. Uncomplicated infections due t sensitive organisms should respond in 24 to 48 hours. If no respons occurs in 5 days, stop therapy and recheck the bacterial sensitivitie Hydrate patients well to minimize renal irritation. Inject deeply into th upper outer quadrant of the gluteal muscle. Discard partially used vial after 48 hours.

Supplied: Rubber capped vials as a ready-to-use sterile aqueous solution in two concentrations: 0.5 Gm. in 2 ml. 1.0 Gm. in 3 ml.

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Pathologic staging for lesions of the sigmoid colon revealed:

Dukes A	34
Dukes B	140
Dukes C	120
Unstaged	20

Carcinoma of the rectosigmoid included:

Dukes A	16
Dukes B	16
Dukes C	31
Unstaged	5

Carcinoma of the anus was noted in 19 patients.

The time-interval between the onset of symptoms and the patient's first reporting for medical consultation is noted in the following chart:

1 Day to 4 Weeks	1–3 Months	3–6 Months	6–12 Months	Over 1 Year
184	157	103	36	56

As regards physician-performance, in 37 patients a diagnosis was made on routine physical examination, which included sigmoidoscopy on asymptomatic patients. In 40 additional patients the diagnosis of carcinoma of the sigmoid or rectum was made incidentally on a hospital admission for other causes during which sigmoidoscopy was performed. Most of these patients were asymptomatic, although a few with retrospective interrogation had minimal symptoms.

The following chart gives an evaluation of physician-performance from the time of the first office visit to the establishment of a diagnosis:

1 Day to 4 Weeks	5 Weeks to 2 Months	3–6 Months	7–10 Months	1 Year	Over 1 Year
367	44	48	3	16	3

The diagnostic procedures by the first physician consulted are tabulated as follows:

278 Rectal examination, sigmoidoscopy, barium enema, and referral
64 Rectal examination, sigmoidoscopy, referral
19 Rectal examination, barium enema advised, and referral
8 Barium enema only done or advised
78 Rectal examination only with referral to second physician for diagnosis
6 Rectal examination only with no referral for further diagnosis
1 Vaginal examination and referral for further examinations
25 No examination for any type but referral to second physician for examination
23 First physician unknown but second physician made immediate diagnosis
2 No examination, no referral
32 In 32 cases the physicians have not answered letters asking for information in regard to dates of first visits, examinations performed, advice, etc.; therefore, these cases cannot be assessed as to delay or prompt diagnosis

Among associated diseases 60 of the 613 patients were noted to have diabetes, and in 44 patients a diagnosis of cancer in another organ had previously been made. Seven of the patients had a diagnosis of "colitis" from 6 months to several years prior to the cancer diagnosis. An additional 10 had reasonably well-established diagnoses of ulcerative colitis made from 6 months to 30 years prior to the cancer diagnosis. In 42 patients a diagnosis of diverticulosis or diverticulitis had been made from 1 month to several years prior to the establishment of the presence of a neoplasm.

Comment

It is believed by the Committee that useful and important goals were achieved in the course of this study. The enthusiasm and interest of the Medical Society in the improvement of the management of cancer were again demonstrated. Successive Presidents and Executive Boards of the Society have coöperated fully with the Committee, and the Executive Board by formal vote assured publication of all Committee findings regardless of their nature.

The support of the 10 local hospitals was most helpful. In the 613 cases a physician has never refused permission to review the hospital record of his patient, and in the great majority of cases these same physicians also coöperated by supplying additional data from their office records.

The monthly Committee meetings at which cases were reviewed were considered by all concerned to be worthwhile educational opportunities. Committee members had been selected for their experience with colon-rectal cancer and were all actively interested in the work of the Committee However, the average attendance of invited physicians at these meetings was only 16, and this number was not good considering that all physicians in the area had been invited to participate.

It is apparent that delays in case management have occurred. In the discussion of these cases the Committee pointed out frankly in a scientific manner what were considered to be delays and then suggested methods of improvement. A copy of the discussion of all of the cases plus an abstract of each case were sent to the involved physicians who did not attend the meetings and also to the Chief of the Tumor Board in each hospital for use in his program. It is hoped that these points were made in as objective a manner as possible.

It is evident from the statistics presented in this report that there is a need for greater public education as evidenced by the delay in seeking medical advice after significant symptoms become apparent. Sixty-six per cent of the patients waited more than 1 month between the onset of symptoms and their first medical consultation. As regards physician-performance, 60 per cent of cases were diagnosed and treated within 1 month. It is encouraging that considerable attention has been given to routine sigmoidoscopy on asymptomatic persons, as shown by the fact that 12.5 per cent of patients were diagnosed in the presymptomatic phase of their disease.

On the other hand, in 18.5 per cent of cases an unacceptably long delay in diagnosis occurred, i.e., longer than 1 month. In 9 per cent of the cases information from records in physicians' offices was not available for evaluation of physician-performance. In some cases clinical management was inexcusably bad, e.g., prescription of suppositories for rectal bleeding on an assumed diagnosis of hemorrhoids without rectal examination, sigmoidoscopy, and barium enema.

The importance of the routine rectal examination and sigmoidoscopy on asymptomatic patients as part of a yearly physical examination, especially on patients aged 40 and over, is evident. Rectal examination, sigmoidoscopy, and barium enema with air contrast should be performed on all patients with any symptoms suggestive of colonic disease. Other clinical aphorisms which have been substantiated by the reviews of the Committee include the fact that all hemorrhoidectomy specimens should be submitted for pathologic examination to lessen the possibility of missing a squamous-cell carcinoma of the anus. The presence of diverticula and colon cancer makes for a difficult diagnostic complex. This requires skill and persistence on the part of the physician in ascertaining the presence of carcinoma and not attributing symptoms to the diverticula alone. The importance of prolonged follow-up in all patients who have had colon cancer does not need further documentation.

Although it should not need reëmphasis, the Committee's review again underlined the importance of determining the true cause of anemia in adult patients. Patients in this review were noted to have been started on iron or other therapy when the cause of the anemia was a bleeding tumor in the colon.

The pain produced by a partially obstructing tumor of the colon may be rather nonspecific and in several cases in this series was considered indicative of peptic ulcer. When an upper gastrointestinal X-ray examination was reported to be normal the patient was treated symptomatically and a barium enema, which would have revealed the true nature of the condition, was deferred.

In both private and clinic patients who were being treated on a prolonged basis for other chronic conditions the importance of periodic reappraisial of the whole patient is important. Colonic-rectal cancers have developed insidiously in these patients and have not been detected with the promptness which could be considered ideal.

When symptoms are suggestive of a colon tumor and sigmoidoscopy cannot be done beyond the distance of 10–15 cm. for pain or other reasons, it is frequently advantageous to repeat this examination under anesthesia.

It has been amply demonstrated in this review that an important aid to diagnosis of lesions by barium enema is the review of these films with the radiologist by the referring physician. This communication will give to both physicians the best understanding of the clinical problem which they face.

From the clinicopathologic viewpoint appropriate labeling of all tissue removed by the surgeon is desirable to allow proper orientation of the pathologist to the specimen. The pathologist, on his part, should give an adequate description of the total number and location of the lymph nodes, size of the tumor, etc. The final pathologic report should contain a staging of the disease according to the Dukes classification.

In this series there were many examples in which a barium enema was ordered without rectal examination or sigmoidoscopy. The recommended progression of diagnostic endeavors is rectal examination followed by sigmoidoscopy followed by barium enema with air contrast. The Committee strongly urges the use of air contrast with the barium enema to increase the diagnostic accuracy of colonic lesions.

(*Continued on page 242*)

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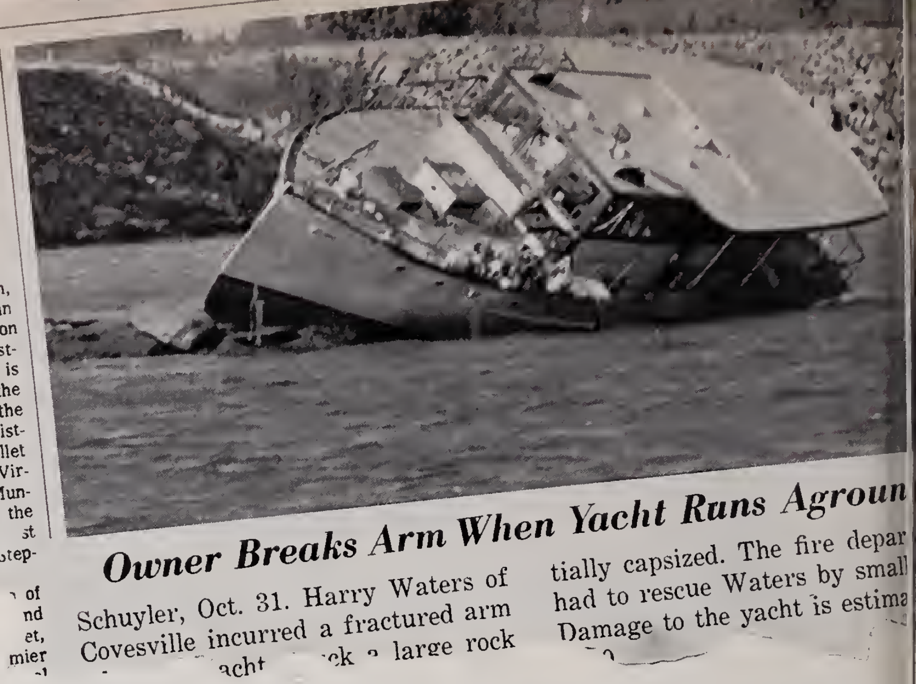

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Report on Woodside (Youngstown, Ohio) Workshop

A WORKSHOP on "Misery as a Contagious Disease: The Patient, His Family and the Helpers—Especially the Clergyman" was presented at the Woodside Receiving Hospital in Youngstown, Ohio, January 15. The Woodside Receiving Hospital, a mental institution, is planning to provide a short-term treatment program within the context of a community mental health center. As part of a staff development program, supported by NIMH, an invitation was extended to the Reverend James Adams, rector of St. Mark's Episcopal Church, Capitol Hill, Washington, D.C., and to Dr. Maxwell Boverman, a psychiatrist and member of the D. C. Medical Society's Committee on Medicine and Religion, to discuss family therapy, but the subject finally chosen included both family dynamics and community involvement.

The participating audience included about 110 nurses (including students), psychiatric aides, and social workers, and about 35 ministers, all from the hospital staff and the community. Other than the speaker, the only physicians present were a few psychiatrists of the hospital staff.

The audience responded frankly in the discussion of concrete problems and dissatisfactions. There was agreement that increased interdisciplinary contact was needed not only during professional meetings but also on a personal level when dealing with problems of the client (patient or parishioner) although the mechanisms of achieving this were vague. The discussion shifted from the use of medical terminology, diagnosis, and treatment to social aspects of the patient and his family's interaction, with increasing awareness and respect for the experiences and feelings of the "helpers," professional or otherwise.

While the orientation of the audience was mainly toward the mental patient, many considerations might also apply to patients in general, whatever the ailment. Of particular interest was the practically unanimous expression of need for more interprofessional discussion. The absence of physicians (nonpsychiatric as well as psychiatric) of the community was noted. Concerning this observation, and of significance to a medical society, were the comments by the clergymen: "We feel left out in the care of our sick parishioners. We should like to help but sometimes we are in the dark. Doctors can help us but don't. Doctors are too busy to pay attention to us. Sometimes we know facts about the patient that the doctor doesn't. What can we do about this isolation?"

It is part of the purpose of our Committee on Medicine and Religion to inform both clergymen and physicians of the importance of enhancing each other in the best interests of those for whom we have professional responsibility and to provide information and mechanisms helpful in accomplishing this purpose.

MAXWELL BOVERMAN, M.D.

CORONARY CARE UNIT of George Washington Hospital will benefit by a check of $1,100 awarded, February 12, by members of the D. C. Pharmaceutical Association. Participating in brief ceremonies were (left): Mr. Richard Mace and Miss M. Eileen Brooks, of the Association, with Mrs. Jeanne Abel, head nurse of the cardiac catheterization laboratory. Dr. George A. Kelser, Jr., Director of Cardiology, accepts the check; with him is Dr. James J. Feffer, Associate Dean of Clinical Affairs.

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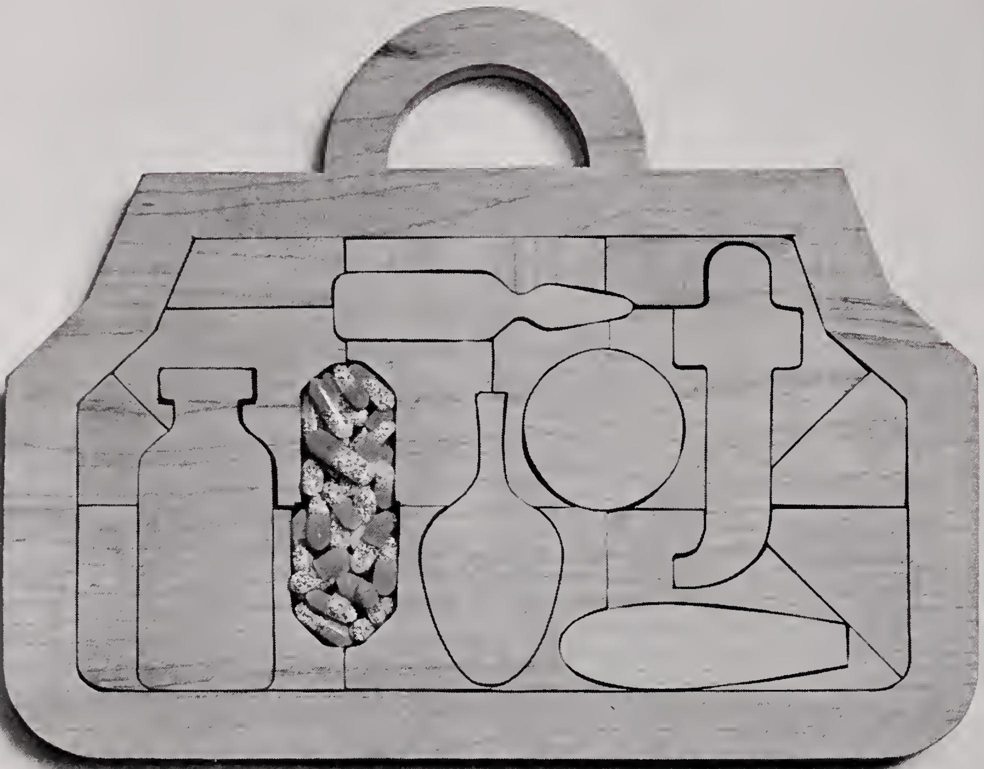

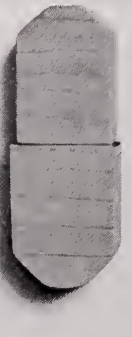

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HEALTH DEPARTMENT NOTES

Physician-Social Worker Coöperation

The axiom that most patients admitted to D.C. General Hospital are not in crisis but in chronic stress has been an observation of the staff of its Social Services Division. Years of economic, emotional, social, environmental or personal problems may have combined to prevent or delay the benefits available to a patient during hospitalization.

The mission of the Social Services Division parallels that of the Hospital itself in that it is charged with patient care, professional training, and research. A clinical social worker is required to have a master's degree in social work, and a social-work associate must have a bachelor's degree in a social science in order to be employed in the Division.

Frequently the staff of the Social Services Division is among a treatment team. Thus involved in a case at the physician's request, the clinical social worker has as her first objective the development of a clear understanding of the patient's mental, social and emotional problems. To this end she evaluates and reports to the physician and to other members of his treatment team on those factors likely to hamper the patient's transition from the community to the hospital and ultimate return to the community. Individual social histories are developed for use by the team in charting treatment procedures and rehabilitative measures.

The next steps are, first, to interpret to the patient and other concerned adults pertinent hospital procedures and the total treatment plan, and, second, to work closely with the patient and his family in promoting understanding of the relationship of emotional, social and mental factors involved in illness and disability and their residual effects on both patient and family. Further goals are to prevent family breakdown as the result of health problems, to encourage full utilization of the medical care provided, and to encourage more effective use of hospital beds through utilization of community services, such as the Health Department's Home Care Services Division. Responsibility for referral of a patient to the Home Care Services Division is entirely that of the Hospital's Social Services Division.

Social Services Division retains social-work responsibility for the patient for a minimum of 30 days following discharge from the Hospital. During this period the clinical social worker may arrange for home visits, return visits to the social worker at the Hospital, contact with some other agency (public or voluntary), or may see no need for further contact unless initiated by the patient.

Drug Abuse—Manifestations of the Marijuana Abuser*

They are difficult to recognize unless under the influence of the drug at the time they are being observed.

1. In the early stages individuals may appear animated and hysterical with rapid, loud talking and bursts of laughter.
2. In the later stages the person is sleepy or stuporous.
3. Depth perception is distorted, making driving dangerous.

Note: Marijuana cigarettes are rolled in a double-thickness of brown or off-white cigarette paper. These cigarettes are smaller than a regular cigarette with the paper twisted or tucked in in both ends, and with tobacco that is greener in color than regular tobacco. The odor of burning marijuana resembles that of burning weeds or rope. The cigarettes are referred to as "reefers, sticks, Texas tea, pot, rope, Mary Jane, loco weed, jive, grass, hemp, hay."

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*This information is reproduced from "Parental Alert," copies of which may be obtained on request to the Broward County Medical Association, 2200 South Andrews Ave., Fort Lauderdale, Fla. 33316.

It should be noted that staff members of the Social Services Division also may enter a case at any point upon request from a patient or other concerned adult. However, the clinical social worker first consults with the physician in charge of the case and, having secured his approval, obtains his observations and the patient's medical background. After seeing the patient she discusses with the physician her assessment of the patient's problem and works out a tentative solution based on the mental, social and emotional factors involved. Any action she may take is coördinated with other treatment procedures. In all cases every activity undertaken by the social worker is recorded on the patient's chart.

In addition to non-health problems already existing, the assistance of the Social Services Division may be sought because of the patient's total refusal to accept medical care, his wish to

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sign out of the hospital against medical advice, his refusal to undergo recommended surgery, his refusal of prescribed medication, or his demonstration of anxieties far exceeding those to be expected for the type of health problem involved. Much work is carried on with the families of patients who need help in coping with the effects of illness, handicapping conditions, or imminent death.

The patient, of course, has the right to make his own decision, although he may find it difficult to do so. Many may never have faced up to this necessity in the past. The individual, for instance, who should be referred to a nursing home but does not want to admit inability to care for himself may refuse such a referral. The clinical social worker, however, is responsible for presenting all the alternatives and the probable consequences of each.

The tendency to run away from difficult situations rather than make a decision is exemplified by the case of a young woman who presented an involved but not unusual problem to the Social Services Division.

> A school dropout aged 16, she ran away from an unhappy home and a year later had her first of several illegitimate children. The girl was placed under the supervision of a welfare worker and the baby was put up for adoption. Shortly, she began living with a young man and bore him 2 babies, both of whom were placed for adoption.
>
> Recently this young woman, now 23 years old, drug-addicted, syphilitic, and suffering from hepatitis, delivered her fourth child at D.C. General Hospital. The 2-pound, 14-ounce baby, drug-addicted, syphilitic, and jaundiced, went through the withdrawal period at the hospital and was treated for both syphilis and jaundice.
>
> Having given up the first 3 children for adoption, the young mother indicated she would like to keep this child, although she has no funds and no contact with her relatives. The young father, charged with possession of drugs, is serving a jail term. The couple does not get along with his parents.
>
> The clinical social worker worked with the infant's mother in developing suitable plans for the baby's future. The plans offered several possibilities: provision of protective services for the baby in the mother's home, foster care, or adoptive procedures. Once again, however, the mother refused to face a decision and disappeared.
>
> Found some time later living with 2 male friends of the baby's father, she reëntered discussion with the clinical social worker as to the baby's future. Finally, the mother arrived at a decision and the baby is now in her care, with protective services provided by Child Welfare.

Some time ago the Social Services Division established a program to assist unwed pregnant girls under 17 years old. Girls so young rarely are able to visualize, let alone face, the reality of a baby. They must be made aware of the problems to be faced and how to cope with them. An increasing number of young mothers are keeping their illegitimate children through the casework services offered in this program.

Clinical social workers are called in on any cases involving or suspected of involving the battered child syndrome. Children often are brought into the Hospital's Emergency Room by adults who offer elaborate explanations of circumstances surrounding the child's injury. Frequently, results of a physical examination contradict such explanations and, in addition, reveal evidence of earlier untreated injuries.

In the District of Columbia a report of known or suspected child abuse must be made to the police by the doctor who sees the child, and the clinical social worker is closely associated with the physician in the evaluation and continued planning for such cases.

Social workers and social-work associates are assigned to the major medical divisions, including general medical, pulmonary diseases, orthopedics, neurosurgery, and the Howard Surgery Division. One clinical social worker each is assigned to pediatrics and obstetrics and 3 to outpatient maternity clinics. Three clinical social workers serve throughout the Hospital as supervisors of other Social Services staff members.

Staff members in the Social Services Division receive a great deal of inservice training, much concerned with the types of cases frequently treated at the Hospital. These may range from the problems of a rape victim to those of individuals facing the imminent death of a relative. Continuing education in broader aspects of social work also is part of the inservice training, as is participation in studies leading to increased understanding of psychosocial factors in illness and health. Clinical social workers also participate in training programs with professionals from other disciplines.

Social-work graduate students from Howard and Catholic Universities are assigned to D.C. General Hospital for experience in field work during the academic year. Under supervision of a field instructor from the Social Services Division, each is assigned to cases according to his individual academic needs. They spend 2½ days each week at the Hospital.

The Chief of the Social Services Division supervises social-work students in the preparation of their theses for master's degrees at both universities. When each thesis is completed and has been approved a bound copy is presented to the Hospital's medical library. Students whose theses are thus supervised may not necessarily be those who have been assigned to the Hospital for field-work experience.

RAYMOND L. STANDARD, M.D., M.P.H.
D. C. Director of Public Health

Report of the Committee on Smoking and Health

THE INCOMING CHAIRMAN of this Committee called a news conference, December 17, 1969, during which he stated:

> "The purpose of this conference is to inform you and interested parties of some proposed action to be taken concerning the practice of smoking tobacco aboard commercial aircraft within the jurisdiction of the Federal regulatory bodies.
>
> "Disturbed by pernicious smoking by my fellow passengers, convinced that smoking per se is harmful to passenger and aircraft, and mindful that these constitute potential health and safety hazards, I and others began to accumulate data over the past year which have convinced us that the former statements are valid; namely, that smoking constitutes a health hazard to passengers and a safety hazard to the aircraft.
>
> "John F. Banzhaf, Executive Director of ASH (Action on Smoking and Health), and his associates have also been working in this field. Their research has brought them to the same conclusion. They have promulgated a petition to the F.A.A. which we personally endorse and which carries the approval of the Medical Society of the District of Columbia.
>
> "Certain Members of Congress and several outstanding health authorities, as well as hundreds of physicians in the United States, have indicated a willingness to help in any way possible to ameliorate this problem of smoking."

Mr. Banzhaf, who was present at this conference, made a longer and more detailed statement in support of the above conclusions.

On December 18, 1969, as recorded in the *Congressional Record*, Senator Mark O. Hatfield (R—Oregon) introduced S. 3255, a Bill Restricting Smoking Aboard Aircraft. In support of this proposed bill the statements by Mr. Banzhaf and Dr. John Keshishian were reprinted in full in the *Record*.

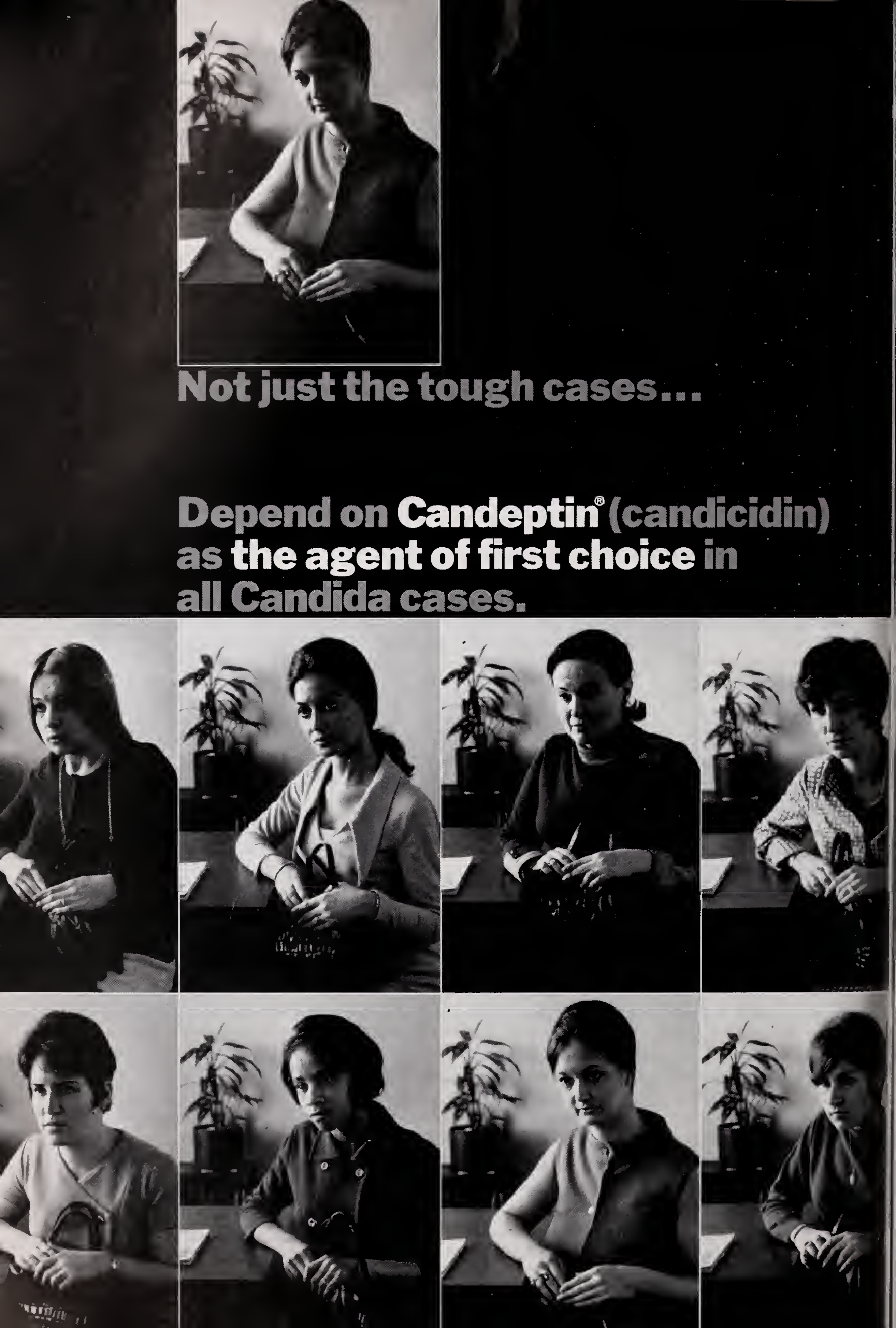
On January 7, 1970, the D. C. Medical Society approved a series of actions aimed at the reduction or the elimination of cigarette smoking because of dangers to health. In a press release President Frank S. Pellegrini stated that the Society approved the following measures:

1. To ask all practicing members of the Medical Society to post "No Smoking" signs in their offices.
2. To request the D. C. Board of Education, the Congress of Parent-Teacher Associations, and the Acting Superintendent of D. C. Schools to prohibit smoking on school property by teachers and pupils.
3. To send a letter to the President of the United States strongly protesting the use of tax dollars to promote the production and sale of tobacco while at the same time spending other tax dollars to discourage cigarette smoking because of hazards to health. The U.S. Department of Agriculture was criticized for promoting cigarette smoking overseas by the distribution of a film entitled "The World of Pleasure," purported to be a travelogue.
4. To communicate with all D.C. hospitals and the Veterans Administration, asking that the sale of cigarettes be discontinued on their premises; a similar letter to be sent to the Surgeons General of the Military and Naval Services.
5. To urge hospital administrators to permit nonsmokers to share semiprivate rooms and to strictly enforce no-smoking regulations by hospital visitors.

Dr. Pellegrini praised Suburban, Providence and Georgetown University Hospitals for discontinuing the sale of cigarettes on their premises.

During "No Smoking Week," January 11–17, the staffs of the Medical Society and its Medical Bureau answered all calls with: "This is No Smoking Week."

In a telegram to Najeeb Halaby, President of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References 1 Olsen, J R Journal-Lancet 85 287 (July) 1965 2 Lechevalier, H Antibiotics Annual 1959-1960. New York, Antibiotica, Inc., 1960, pp 614-618 3 Giorlando, S W., Torres, J F., and Muscillo, G Am J Obst & Gynec *90* 370 (Oct. 1) 1964 4 Friedel, H J Maryland M. J. *15* 36 (Feb) 1966

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Pan American Airways, January 28, Dr. Pellegrini said: "The Medical Society of the District of Columbia, which this past December publicly came out for the separation of smokers and nonsmokers in airplanes, congratulates Pan American for announcing it is doing precisely this immediately—beginning with its 747 plane. I hope you will extend this policy to all your aircraft as quickly as possible."

Dr. Pellegrini called for all other airlines to follow the example of Pan American by separating their smokers and nonsmokers.

He reported that a number of hospitals had responded favorably to his plea that they dispense with the sale of cigarettes in hospitals. Georgetown, Providence, and the Washington Sanitarium have not sold cigarettes for some time. Those indicating they would or have already banned the sale of cigarettes included Freedmen's, D. C. General, Leland Memorial, Alexandria, Montgomery County General, Rogers Memorial, and the National Orthopedic Hospitals.

A series of half-hour television programs titled "How to Stop Smoking" were shown over WETA-TV (Channel 26), beginning in January, for 5 successive weeks. This series was sponsored by the Washington Heart Association, the D. C. Division of the American Cancer Society, and the D. C. Tuberculosis and Respiratory Disease Association.

These programs, originally produced as a public service by WOR-TV in New York, featured Dr. Donald T. Fredrickson, a nationally known authority on smoking withdrawal who was formerly Director of the Smoking Withdrawal Clinic of the New York City Health Department.

Dr. Fredrickson and screen star Tony Curtis appeared at a luncheon honoring Senator Frank Moss, of Utah, January 13, at the Mayflower Hotel during "No Smoking Week."

JOHN M. KESHISHIAN, M.D.
Chairman, Committee on Smoking and Health

► NEW MEMBERS

Active

JOHN CHARLES CHATEL, M.D. Office: St. Elizabeths Hospital. Born in Paris, France. Medical degree: Creighton Medical School, 1965. Specialty: Psychiatry.

JACK J. LEVIN, M.D. Office: 1730 E Street, N.W. Born in Milwaukee, Wisc. Medical degree: University of Wisconsin, 1934. Specialty: Internal Medicine.

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George Orest Semchyshyn, M.D. Office: 3201 Wisconsin Avenue, N.W. Born in Lvow, Ukraine. Medical degree: Georgetown University, 1963. Specialty: Psychiatry.

Associate

Dionisios Peter Devaris, M.D. Office: 6825 16th Street, N.W. Born in Brooklyn, N.Y. Medical degree: State University of New York Downstate Medical Center, 1955. Specialty: Child Psychiatry.

►DOCPAC BRIEFS

or

Let's Retain Our Constitutional Freedoms

The increased response to the DOCPAC membership appeal has been gratifying. It appears that more physicians are becoming aroused by the increasing trespasses of Government on the free enterprise system.

The recent report of the Committee on Planning and Development of the AMA (the Himler Report) recognizes the need "to make health services of high quality available to all individuals . . . regardless of their social class, ethnic origin, ability to pay for services, or the source of the payment."

It is this "source of the payment" that is of concern to DOCPAC, and without any resistance from perceptive physicians it will be determined in a typically bureaucratic fashion. If we are to carry out the recommendations of the Himler Report, we must and can attract highly qualified candidates to medicine by maintaining and creating incentives of "minimal regimentation, a multiplicity of practice options, and freedom of choice for both physicians and patients."

Help stem the tide of increasing Government control which leads to erosion of our Constitutional freedoms.

Support your District of Columbia Political Action Committee by becoming an involved member. Send your dues to Dr. William H. Cooper, 825 New Hampshire Avenue, N.W., Washington, D.C. 20007. Individual membership is $20.00; family membership (including wife and children), $30.00.

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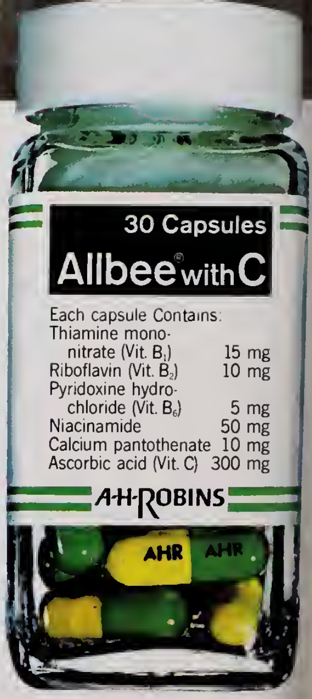
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News & Personals

Summary of Executive Board Actions

Proceedings of February 24 Meeting

Dinner for the Board members was served in the Exhibit Hall of the Medical Society. Dr. Robert J. Coffey presided at the meeting that followed, which was attended by Drs. Frank S. Pellegrini, Marvin C. Korengold, Howard Katzman, James E. Boland, Henry D. Ecker, John J. Hughes, and Mr. Thomas Sadler, Secretary. The meeting was called to order at 7:10 p.m. by the Chairman.

The minutes of the January 26 meeting were approved as read.

Committee Meetings: The Secretary reported the following committees had met since the last meeting of the Board:

January	28	Committee on Mental Health
	30	Committee on Medicine and Religion
	30	Committee on Child Welfare
February	2	Committee on Liaison with Allied Professions
	2	Program Committee, Scientific Assembly
	4	Fee Review Committee
	4	Committee on Medical Aspects of Sports
	5	Physician Placement Committee
	10	Board of Credentials
	16	Committee on Smoking and Health
	16	Program Committee, Scientific Assembly
	17	Grievance Committee
	18	Legislative Committee
	19	Breast Cancer Study Committee
	19	Board of Directors, Health Foundation of D.C.
	19	Traffic Committee

Board of Credentials: On recommendation of the Board of Credentials, 4 applicants were elected to Active membership and 1 to Associate membership. Their names appear on page 231. Approval was given to the following changes in membership status:

Transfers

Active to Life: Arthur H. Simmons

Active to Associate: James A. Austin, Ganka K. Benderev, Lucille P. Carter, and Marion E. Maclean

Resident-Intern to Associate: Ira W. Pearlman

Resignations

Active: Philip J. Ferris, Roy Hertz, Roy T. Lester, John F. Maher, James F. O'Rourke, and Earle Silber

Associate: Lawrence Joseph Eanet, Stephen J. Sheehy, Jr., Ashby W. Smith, and John B. Umhau, Jr.

Dr. Thomas W. Mattingly had requested a transfer from Active to Associate membership because of his retired status. In recognition of his distinguished military career and his prominent role in the establishment of the Metropolitan Washington Regional Medical Program, the Board recommended that he be transferred to Honorary membership, and the Executive Board concurred with this recommendation.

Breast Cancer Study Committee: After some discussion the Board voted to grant the request from this Committee to send a letter to physicians asking for additional pertinent information not already included in the patient's hospital history.

Ad Hoc Committee on Abortion: The Board had reviewed earlier a report submitted by the Ad Hoc Committee on Abortion and described the report prepared by the Chairman, Dr. Robert B. Nelson, Jr., as very thorough. There was considerable discussion regarding the report and the abortion situation in general. The Board agreed with Dr. Coffey that whatever position the Society takes should have the support of the District Bar Association, if possible. The Chairman was authorized to appoint a subcommittee to prepare a resolution for submission to the total membership.

Breakfast Meetings with Dr. Standard: Dr. Pellegrini reported on the discussions held with Dr. Raymond F. Standard, Acting D.C. Health Director, and Dr. James Carpenter, President of the Medico-Chirurgical Society of D.C., at breakfast meetings on January 30 and February

20. Dr. Pellegrini stated that Dr. Standard would very much like to have more physicians participate in Medicaid. To assist in this Dr. Pellegrini said he would write an article for the *News*.

U. S. Pharmacopoeial Convention: A motion was made and carried that Dr. Lawrence E. Putnam, the Society's representative to the U. S. Pharmacopeial Convention, be given the responsibility of voting on the proposed changes in that organization's constitution and by-laws.

Other Business

1. Dr. Pellegrini stated that the response to letters objecting to physician-listing in bold face type in telephone directories had been very good; more than 75 per cent of those who replied agreed to refrain from further use of bold face type in telephone directories. The Board voted to advise the publishers, the Reuben H. Donnelley Corp., of the Society's position on the matter.

2. At the request of Dr. Elizabeth S. Kahler, Chairman of the Committee on Medicine and Religion, the Board agreed that the Society cosponsor a dinner forum with the National Presbyterian Center and the National Cathedral, at no expense to the Society. The subject of the forum will be "The Right to Die."

There being no further business the meeting was adjourned at 9:25 p.m.

MEETINGS

The Third National Voluntary Health Conference, sponsored by the Council on Voluntary Health Agencies of the American Medical Association, will be held at the Statler-Hilton Hotel in Washington, May 7–8. The meeting will emphasize "Health Team Relationships: Professional Associations, Governmental Agencies, Voluntary Organizations" in the provision of health care, which will be broadly interpreted to include research, health education, and health services. Information on registration and reservations may be obtained from Dr. D. A. Dukelow, Conference Coördinator, AMA Department of Health Education, 535 North Dearborn Street, Chicago, Ill. 60610.

The Cervical Cancer Detection Project of D.C. General Hospital will hold its **Second Annual Symposium on Cervical Cancer** on Saturday morning, May 9. The major topic for discussion will concern "The Safety of Oral Contraceptives and the Cervical Epithelium."

Dr. Joseph P. O'Connell, of Suburban Hospital, Bethesda, Md., and Dr. Istvan Nyirjesy, of D.C. General Hospital, will give the first papers. The guest lecturer will be Dr. J. Donald Woodruff, Professor of Medicine, Johns Hopkins University School of Medicine, who will speak on "Cervical Epithelial Changes Associated with Oral Contraceptives." A panel discussion will follow, to be moderated by Dr. Andre Hellegers, of Georgetown University. Panelists will be Dr. Woodruff and Dr. Hugh Davis, both of Johns Hopkins, and Dr. Philip A. Corfman, of the National Institutes of Health.

Advance registration (free) is recommended. For further information call Dr. Nyirjesy, Program Chairman, D.C. General Hospital, 626-7293.

The Montgomery County (Maryland) Heart Association will sponsor its all-day **1970 Cardiac Symposium** on Wednesday, May 20, at the Bethesda Country Club, 7601 Bradley Blvd. Registration will open at 8:30 a.m.

The first speaker will be Dr. W. Proctor Harvey, Professor of Medicine at Georgetown Uni-

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versity, who will talk on "The Significance of Systolic Murmurs." Dr. George E. Burch, Professor and Chairman of the Department of Medicine, Tulane University, will discuss "Premature Beats" at 10 o'clock. Dr. Leonard S. Dreifus, Research Associate Professor of Physiology and Biophysics, Hahnemann Medical College, will give a paper on "Newer Aspects of Atrial Arrhythmias" at 11:20.

Papers scheduled for the afternoon are:

1:30: "Fits and Faints"—Dr. Bernard Tabatznik, Chief of the Cardiology Division, Sinai Hospital, Baltimore

2:15: "Sudden Death"—Dr. Leonard Scherlis, Department of Medicine, Division of Cardiology, University of Maryland

The Symposium will conclude with a speakers' panel, at 3:20 p.m., with Dr. Robert R. Montgomery as moderator.

A Postgraduate Course on "The Diagnostic Evaluation of Children with Learning Problems: A Systems Approach" will be held at the Washington Hilton Hotel, June 3–5, under the auspices of the Department of Neurology of the Children's Hospital of D.C. and the George Washington University School of Medicine. Registration will be limited. For information write to Dr. Mark N. Ozer, Director, Learning Research Unit, 2125 13th Street, N.W., Washington, D.C. 20009.

GENERAL NEWS

A series of publications entitled **"Dietary Management of Hyperlipoproteinemia"** has been prepared by staff members of the Molecular Disease Branch, National Heart and Lung Institute, and the Nutrition Department of the Clinical Center of the National Institutes of Health. The publications have been designed to guide physicians and nutritionists on changes in diet recommended for patients with high levels of cholesterol or other fats in the blood.

The series consists of 6 publications: "Dietary Management of Hyperlipoproteinemia: A Handbook for Physicians" and a publication on dietary management for each of the five diet types. The booklets are available to physicians and dietitians, without charge, from the Publication Section, Office of Heart and Lung Information, National Heart and Lung Institute, Building 31, Room 4A10, Bethesda, Md. 20014.

Annual Spring Benefit

for AMA–ERF and Nursing Scholarship Fund

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"Guides to the Evaluation of Permanent Impairment—The Skin," developed by the Committee on Rating of Mental and Physical Impairment of the American Medical Association is now available. This guide, the twelfth in the series, was published in the January 5 issue of J.A.M.A. Designed primarily for use by physicians, it is, however, of interest and use to all concerned with the medical, administrative, or judicial aspects of programs for the disabled. A limited number of copies may be obtained without charge upon written request to the Committee at 535 North Dearborn Street, Chicago, Ill. 60610.

George Washington University has received Federal approval of a $15,305,000 grant for construction funds for its new Medical School, which represents the largest grant application approval in the University's history. To qualify for this Federal assistance, the GW Medical Center produced assets of more than $7,500,000 toward the project, including gifts and pledges of $4,000,000 raised from trustees, alumni, and friends during 1969. The fund-raising campaign was coördinated by Dr. Seymour Alpert, University Vice President for Development. Construction is expected to begin this summer subject to the availability of Federal funds.

Private and Federal monies are already in hand for the medical library, a 2-million dollar building which will adjoin the Medical School. It is planned to consolidate the entire Medical Center on the

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Administrator

northwest corner of the University campus, a site bounded by 23rd, 24th, H and Eye Streets, N.W. The architectural firm is Mills, Petticord and Mills.

When the new facilities are completed, at a cost of some $25,500,000, it is expected that there will be 2 entering classes each year instead of the traditional single class, expanding the enrollment from 115 to 150 entering students. Graduate enrollment will rise from 107 to 150 students.

A new Department of Specialty Society Services has been established at AMA headquarters in Chicago. The Department Director is Mr. Theodore R. Chilcoat, Jr., a 5-year staff member, formerly assigned to the AMA Washington Office, who will report directly to Dr. Richard S. Wilbur, Assistant Executive Vice President. The Department will serve and implement the directives of the Interspecialty Committee which was created in 1966. Along with announcement of the new Department, Dr. Ernest B. Howard, AMA Executive Vice President, noted that Dr. Wilbur was appointed Secretary of the Committee, succeeding Dr. Hugh H. Hussey, who is now Director of the AMA Division of Scientific Publications and Editor of J.A.M.A.

New radiology facilities at Georgetown University Medical Center feature a cobalt radiotherapy unit which was put into operation, March 10. The $250,000 facility is financed in part by a grant from the Alexander and Margaret Stewart Trust Fund and a bequest from a cancer fund. The physical plant is located in the lower level of the Child Development Center, a recently completed addition to the Medical Center.

Dr. Robert Andrews, Chief of the Division of Radiotherapy, says the primary purpose of the unit will be the relief of cancer by radiotherapy. It will also be used for research and the teaching and training of radiotherapists, medical students and technicians. In addition to the cobalt unit, a low- and medium-energy X-ray machine will be used along with radium and other radioactive substances for the relief of cancer.

The new facilities will be on display during an open house for Washington area doctors, May 17.

The George Washington University Medical Center has received an unrestricted **grant of $5,000 from Research to Prevent Blindness, Inc.** to pursue new concepts in eye research aimed at the eradication of blinding diseases. Dr. Melvin G. Alper, Acting Chairman of the Department of Ophthalmology, comments that RPB has supported George Washington's eye research activities over the past 2 years for a total of $10,000.

New officers serving the **Providence Hospital Alumni Association** are:

Dr. Alfred J. Suraci, *President*; Dr. William F. Simpson, *Vice President*; Dr. Francis X. Carillo, *Secretary*; and Dr. Francis D. Fowler, *Treasurer*.

The Joint Commission on Accreditation of Hospitals announces that beginning January 1, 1970, accreditation for both hospitals and long-term care institutions will be for a maximum period of 2 years instead of 3. Where survey findings indicate the necessary improvements have not been made or yet completed, accreditation will be given for 1 year. At the end of that time the institution will be resurveyed and a new accreditation decision made.

The Joint Commission has been advised by the National Institute of Mental Health of HEW that it has been awarded a 2-year grant to provide partial financial support for the development of standards for a survey of psychiatric facilities. The primary purpose of the standards will be to improve the quality of care for all persons with mental illness.

PERSONALS

Dr. Thomas M. Peery, Professor and Chairman of the Department of Pathology at George Washington University, left Washington, March 1, on a 6-month sabbatical leave to study the coöperative efforts of zoos and universities in the fields of research and graduate education. A major portion of his study will include visits to approximately 50 zoos located in St. Louis, San Diego, Honolulu, Montreal, Berlin, Copenhagen, and many other cities in the United States and abroad.

The National Zoological Park of the Smithsonian Institution and George Washington University have long been engaged in a coöperative effort to stimulate research and education in veterinary pathology, and the School of Medicine recently appointed a veterinary pathologist to stimulate research in comparative pathology.

Dr. James Spencer Dryden assumed the office of President of the American Association of Ophthalmology during its recent annual meeting in Chicago. A founding member of the AAO, he has served on the Board of Trustees, the Executive Committee, and the House of Delegates.

Dr. Dryden is a graduate of the Medical College of Virginia, Richmond, and served a residency in ophthalmology in the Hospital Division of the College. During World War II he served for 4 years with the Army Medical Corps and was separated with the rank of Lieutenant Colonel. He has been Chairman of the Department of Ophthalmology at the Washington Hospital Center, later President of its Medical Staff, and has headed the Department of Ophthalmology at Doctors Hospital. In 1962 he was President of the Medical Society of the District of Columbia.

Dr. Dryden, new President of the American Association of Ophthalmology

Dr. J. Bay Jacobs, of Arlington, Va., a Life member of the D.C. Medical Society, has been elevated to Clinical Professor Emeritus of Obstetrics and Gynecology in the Georgetown University School of Medicine.

Dr. Jacobs, a 1921 graduate of Georgetown, served his internship at the University Hospital and his residency at the Sloane Hospital for Women and the Misericordia Hospital, both in New York City. He returned to Georgetown to teach and was Director of Obstetrics and Home Delivery Service for about 25 years. He has also served as Director of the Maternity Service of the D.C. Health Department and Chief of Obstetrics and Gynecology at the Arlington (Va.) Hospital.

He is a Founding Fellow of the American Academy of Obstetrics and Gynecology (now the American College) and Past President of the Obstetrical Society of Northern Virginia, the Washington Gynecological Society, and the Georgetown Clinical Society.

Dr. Jacobs has invented and patented many devices pertaining to his field and currently is perfecting a unique method of newborn baby identification.

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Dr. Harry S. Bernton has been reappointed Medical Consultant with the Allergens Research Bureau of the U.S. Department of Agriculture. He has been actively identified with this Bureau since its establishment in 1936.

Brigadier General Frank E. Wilson, MC, USA (Ret.), has retired as Executive Director of the Military Surgeons of the United States after serving in that office for 7 years. In addition to the affairs of the Association, he has been manager of *Military Medicine.*

As an officer in the Army Reserves, General Wilson was called to active duty in April, 1941, and served with distinction throughout World War II. After separating from the service in 1945, he continued as a Commanding Officer in the Reserves and was promoted to the rank of Brigadier General in 1954. He retired in 1965.

General Wilson was named Deputy National Medical Director of the American National Red Cross in 1946 and advanced to Director the following year. From 1952 to 1955 he was Director of the Washington Office of the American Medical Association, and from 1955 to 1963 he was Executive Vice President and Secretary of the Joint Blood Council.

A detailed biography appears in *Military Medicine* for February, 1970. He was an Active member of the Medical Society of the District of Columbia from 1952 to 1965.

Two members of the D.C. Medical Society were among a group of 181 from the United States and Canada who were recently granted fellowships in the American College of Cardiology. They are **Dr. John M. Evans and Dr. Nicholas P. D. Smyth. Dr. Benjamin Manchester** is Governor of the College for the District of Columbia.

► OBITUARIES

Maurice Protas, M.D.

(1899–1970)

Dr. Maurice Protas, a Washington physician for more than 40 years, died, January 14, 1970, at Doctors Hospital. He shared offices at 916 19th Street, N.W., with Drs. Kurstin, Biben and Mondzac, and resided at 2801 New Mexico Avenue, N.W.

Dr. Protas, who was born in Paris, France, January 1, 1899, came to Washington when a child. He studied medicine at George Washington University, receiving his Bachelor's degree in 1921 and his medical degree in 1925. He interned at Sinai Hospital, Baltimore, the following year and studied as a resident physician at Beth David Hospital in New York City from 1926 to 1927.

A specialist in internal medicine, Dr. Protas had a particular interest in diabetic diseases. He was a charter member and Past President of the Diabetes Association of the Washington Metropolitan Area and had served as a State Governor and as Chairman of the House of Delegates of the American Diabetes Association. As Associate in Medicine at George Washington University School of Medicine he lectured on diabetes and was Chief of the Diabetic Clinic at the Hospital for about 30 years. He served as consultant in diabetes to Glenn Dale Hospital.

Dr. Protas was Associate Chairman of the Department of Medicine and Director of the Section on Metabolism and Endocrinology at Doctors Hospital. He was also Vice President of its Executive Staff. Formerly he had served as rotating Chief of Medicine of the George Washington University Division at D. C. General Hospital.

Elected an Active member of the Medical Society of the District of Columbia in 1930, he became a Life member this year. He was a member of the American Medical Association, the American Society of Internal Medicine, the American Therapeutic Association, the Southern Medical Association, the American Geriatrics Society, and a member and Past President of the Jacobi Medical Society. He was a 33rd degree Mason and belonged to the Adas Israel Synagogue.

Dr. Protas leaves his wife, Mrs. Marian Rosenberg Protas; a daughter, Miss Barbara Jean, of Washington; a son, Robert, of Paris; a sister, Mrs. Blanche Resh, of Norfolk, Va.; and 2 brothers, Harry, of Bethesda, Md., and Mitchell, of Washington.

A Maurice Protas Memorial Lectureship Fund has been established at Doctors Hospital.

Jesse A. Keene, M.D.

(1900–1970)

Dr. Jesse A. Keene, an epidemiologist with the D. C. Department of Public Health since 1943, died, January 18, 1970. He also maintained a private practice from offices at 658 Eleventh Street, N.E.

A Washingtonian, Dr. Keene was born, February 28, 1900. He received his Bachelor of Science degree from Howard University in 1921 and his medical degree from Howard in 1924. He externed at Freedmen's Hospital for a year and began private practice of medicine in the District in 1925.

Dr. Keene served on the faculty of Howard University as Assistant Demonstrator of Anatomy (1929–1934) and as Assistant in Surgery (1932–1938). In 1938 he enrolled at Harvard University for postgraduate study in the School of Public Health and received his Master's degree in Public Health in 1939. He also trained in dermatology at the Skin and Cancer Hospital of New York University and at the University of Pennsylvania. He was Assistant in Medicine and Dermatology at Howard University from 1952 to 1954.

Dr. Keene fought with success against racial discrimination in Washington hospitals and public health agencies. He was Vice President of the Public Interest Civic Association of Northeast Washington from 1940 to 1954 and President from 1956 to 1959. He was active in the Federation of Civic Associations' Public Health Committee and served as Chairman of this Committee from 1942 to 1952.

He was Chief Examiner of the D. C. Selective Service for Freedmen's Hospital in 1939–40, and he served for a number of years as a member of the Hospital Advisory Council which administered Hill-Burton funds for hospital construction in the District of Columbia.

Dr. Keene was elected an Active member of the Medical Society of the District of Columbia in 1955, and became a Life member, January 1, 1970. He was a member of the American Medical Association, the National Medical Association, and the Medico-Chirurgical Society of D. C. He had been cited by the Federation of Civic Associations and the National Association for the Advancement of Colored People.

He leaves his wife, Mrs. Earline Keene, of 8141 East Beach Drive, N.W.; a daughter, Mrs. Frederick Jackson; and a sister, Mrs. Martha S. Brooks, all of Washington.

Francis Xavier Richardson, M.D.

(1908–1970)

Dr. Francis X. Richardson, who had practiced general medicine in the Washington area since 1938, died, January 20, 1970, at his home, 11412 Viers Mill Road, Wheaton, Md.

Dr. Richardson was born in Washington, D. C., February 25, 1908. He attended the public schools of Washington and studied medicine at George Washington University, receiving his M.D. degree in 1933. He interned the following year at Providence Hospital.

He continued to serve on the staff of Providence Hospital and also had staff privileges at Sibley, Garfield, Surburban, and Washington Sanitarium and Hospital.

Elected to Active membership in the Medical Society of the District of Columbia in 1943, he transferred to Associate membership in 1960 when he moved his offices out of the District. He was a member of the American Medical Association, George Washington University Medical Society, and Providence and Sibley Hospital Medical Alumni Associations.

He leaves his wife, Mrs. Helen Payne Richardson; 2 daughters, Mrs. James Wiggins, of Wheaton, Md., and Mrs. Gregory P. Kenefick, of Gaithersburg, Md.; 3 sons, Francis X., Jr. and James M., both of Wheaton, and Gerald T., of Silver Spring. Two sisters survive him, Mrs. Estelle Ruby, of Hyattsville, Md., and Miss Mary Catherine Richardson, of Rhode Island.

Keith Balwin Cassells, M.D.

(1928–1970)

Dr. Keith B. Cassells, who had practiced internal medicine in Washington since 1963, died, January 5, 1970, at Cafritz Memorial Hospital. He lived at 2520 34th Street, S.E.

Dr. Cassells was born in Morant Bay, Jamaica, West Indies, and came to Washington 18 years ago to attend Howard University. He received his Bachelor's degree in 1955 and his medical degree in 1959, both from Howard. He interned at Freedmen's Hospital and served a residency in internal medicine at Freedmen's from 1960 to 1962. He also trained in his specialty at D. C. General Hospital for 6 months in 1963.

Dr. Cassells opened offices for private practice at 4057-A Minnesota Avenue, N.E. early in 1964. Previously his offices were in his home. He served Howard University's Health Service and was a consultant to the D. C. Board of Police and Fire Surgeons.

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Elected to Associate membership in the Medical Society of the District of Columbia in 1964, he became eligible for and was transferred to Active membership in 1968. He was a member of the American Medical Association, the National Medical Association, and the Medico-Chirurgical Society of D.C.

He leaves his wife, Mrs. Beecher Travis Cassells; 2 daughters, Yvonne and Victoria; and a son, Keith, Jr. His father, Egbert C. Cassells, and a brother, Donald Cassells, both of Morant Bay, Jamaica, also survive him.

Paul Nealon Taylor, M.D.

(1900–1969)

Dr. Paul N. Taylor, who was engaged in the general practice of medicine in the Washington area for many years, died, December 6, 1969, at Georgetown University Hospital. He lived at 3710 Morrison Street, N.W.

Dr. Taylor was born in Washington, D. C., October 28, 1900. He attended its public elementary schools and Gonzaga High School. In 1924 he received his B.S. degree from Georgetown University, and in 1926, his medical degree, also from Georgetown. He interned at Georgetown Hospital and was on the active staff at Georgetown during his years of practice. He had courtesy privileges at several other hospitals.

Dr. Taylor was elected to Active membership in the Medical Society of the District of Columbia in 1938 and continued his membership until 1960. He was a member of the Georgetown Clinical Society.

Besides his wife, Mrs. Cynthia Winslow Taylor, he leaves a son, Paul Nealon Taylor, Jr., of Washington, and 3 daughters, Mrs. Josephine Rhodes, Riverdale, Md.; Mrs. Robert Foy, Hyattsville, Md.; and Mrs. Antoinette Eason, of Washington. He also leaves a sister, Mrs. Grace Noone, of Rockville, Md.

George I. Eppard, M.D.

(1883–1969)

Dr. George I. Eppard, who practiced in Washington for more than 50 years, died, December 28, 1969, at St. Mary's Hospital in Leonardtown, Md. He had lived in Compton, Md., since retiring 6 years ago.

Dr. Eppard was born in Rockingham County, Viriginia, July 27, 1883. He enrolled for medical study at George Washington University, receiving his M.D. degree in 1911. He interned for 6 months each at George Washington Hospital and Garfield Memorial Hospital. He began his practice in the District of Columbia in 1911.

Elected to Active membership in the Medical Society of D. C. in 1919, he continued his membership until 1952.

He leaves his wife, Mrs. Louise Hiller Eppard; 4 sons, George I., Jr., of Silver Spring, Md.; William H., of Morningside, Md.; Phillip F., of Camp Springs, Md.; and Dr. Leonard C. Eppard, of Lorton, Va.; also 6 daughters, Mildred S., of Washington; Dorothy M., of Hyattsville, Md.; Mary L., of Compton; Mrs. Lee Styles, of Vienna, Va.; Mrs. James Gallagher, of Trevilian, Va., and Mrs. John Sodolski, of Tantallon, Md.

Colon and Rectal Cancer Study—Potter et al

(*Continued from page 222*)

The Committee wishes to thank all area physicians, the Medical Society, and the area hospitals for their coöperation. The contributions of Virginia Fidler, R.N., the professional staff-worker, are gratefully acknowledged. The Committee wishes also to express its thanks to the American Cancer Society, D. C. Division, for its interest and financial support.

THE COMMITTEE

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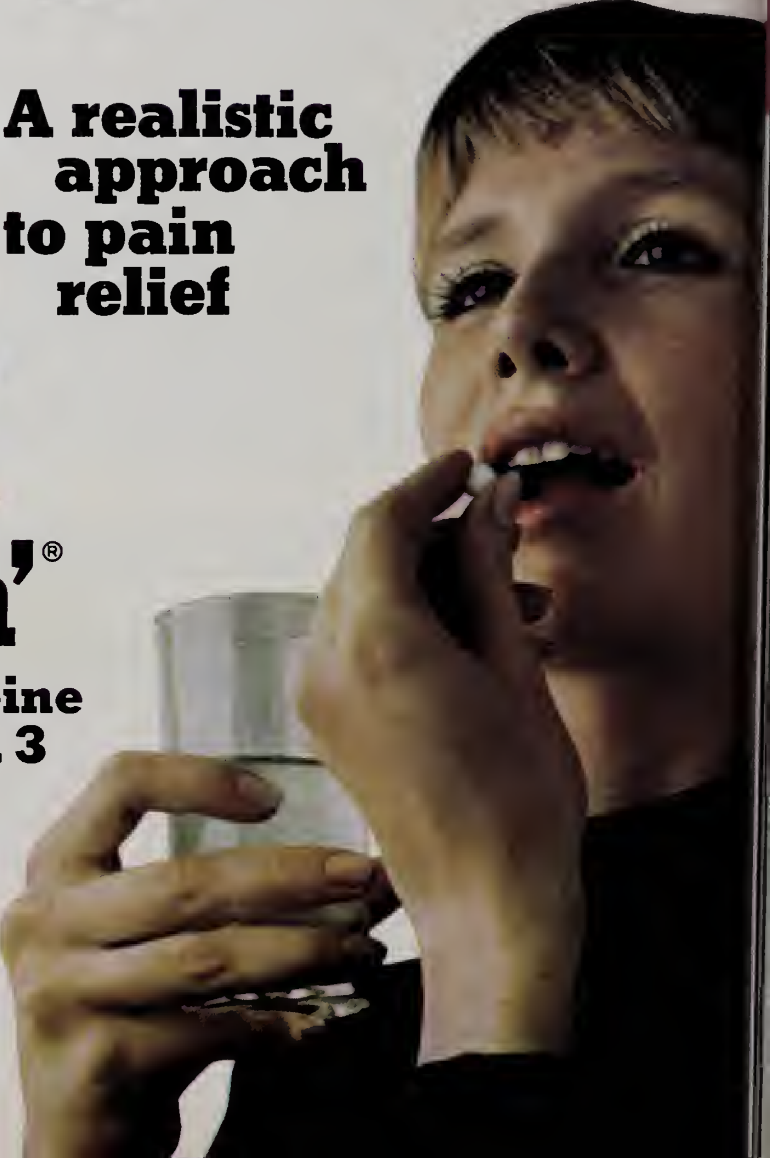

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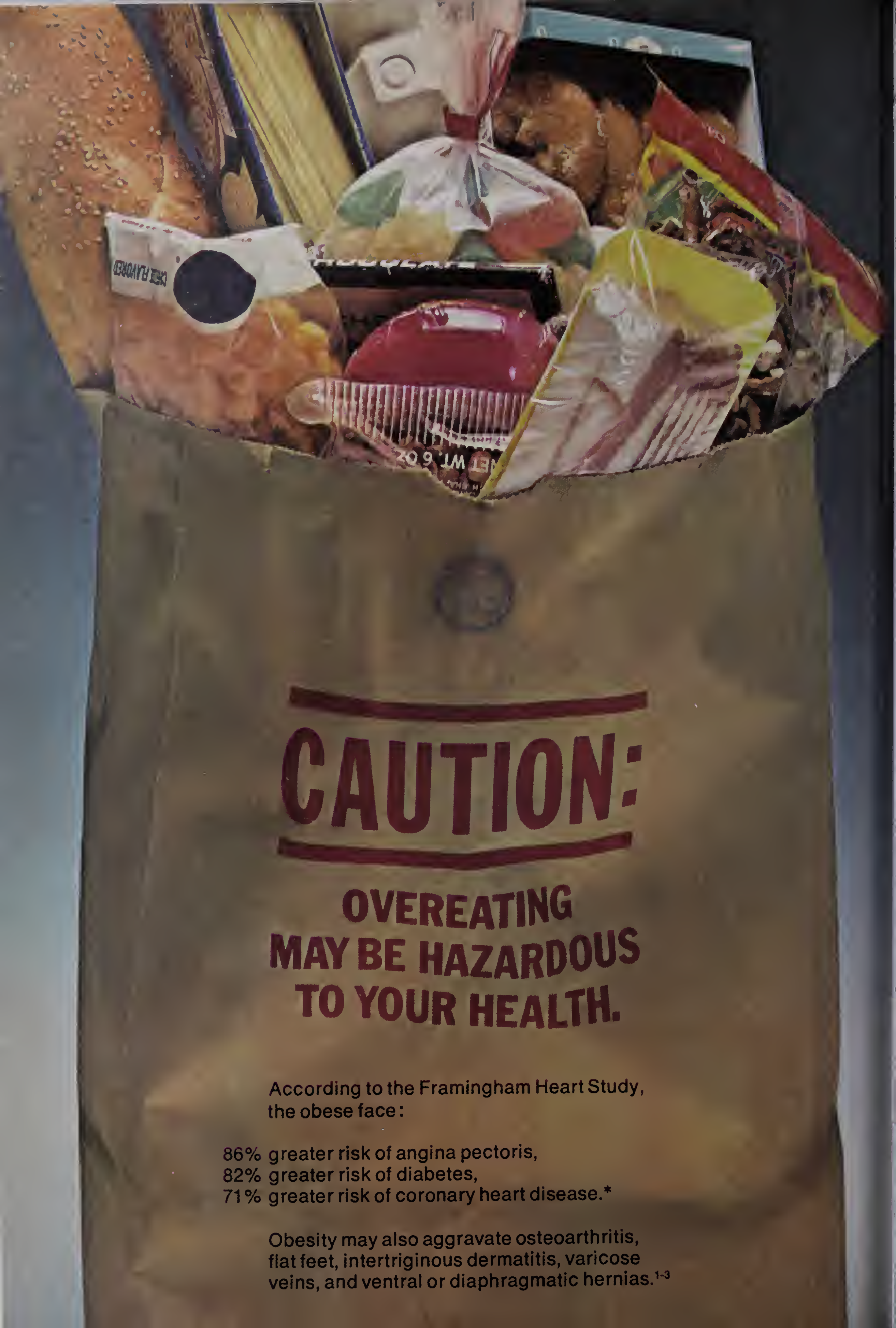
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For contraindications, warning, precautions, and adverse reactions, please see the full prescribing information.
It is summarized on this page.

Where there's no will there's a therapeutic way.

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*Among persons 20% or more overweight as compared with median weight for persons of like height and sex.

1. Kannel, W.B., *et al.*: *Circulation* 35:734, 1967.
2. Thomas, H.E., Jr., *et al.*: *Med. Times* 95:1099, 1967.
3. Albrink, M.J., in: Beeson, P.B. & McDermott, W. (eds.): *Cecil-Loeb Textbook of Medicine*, ed. 12, Phila.: W.B. Saunders Co., 1967.

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April 27–29: American Surgical Association. The Greenbriar, White Sulphur Springs, W. Va. Address: Dr. G. Thomas Shires, Secretary, 5323 Harry Hines Blvd., Dallas, Texas 75235.

April 29–May 2: American Pediatric Society. Traymore Hotel, Atlantic City, N.J. Address: Dr. Charles D. Cook, Secretary, 333 Cedar Street, New Haven, Conn. 06510.

May 2–3: American Federation for Clinical Research. Chalfonte-Haddon Hall, Atlantic City, N.J. Address: Mr. James E. Bryan, Executive Secretary, 2011 Eye Street, N.W., Washington, D.C. 20006.

May 3–5: American Society for Clinical Investigation. Haddon Hall, Atlantic City, N.J. Address: Dr. Don H. Nelson, Secretary, Latter-Day Saints Hospital, Salt Lake City, Utah 84103.

May 4–5: AMA Congress on Environmental Health—Population Growth. Hotel Statler Hilton, Washington. Address: Mr. Frank W. Barton, Secretary, Council on Environmental and Public Health, 535 North Dearborn Street, Chicago, Ill. 60610.

May 6–8: American Association of Genitourinary Surgeons. Cascades Hotel, Williamsburg, Va. Address: Dr. Ormond S. Culp, Secretary, 200 First Street, S.W., Rochester, Minn. 55901.

May 10–14: American Urological Association. Bellevue-Stratford Hotel, Philadelphia. Address: Mr. Richard J. Hannigan, Executive Secretary, 1120 North Charles Street, Baltimore, Md. 21201.

May 20–23: American Gastroenterological Association. Sheraton-Boston Hotel, Boston. Address: Dr. Henry E. Janowitz, Executive Secretary, 11 East 100th Street, New York, N.Y. 10029.

May 25–27: American Gynecological Association. The Homestead, Hot Springs, Va. Address: Dr. Ben M. Peckham, Executive Secretary, 1300 University Ave., Madison, Wisc. 53706.

May 25–30: American Association on Mental Deficiency. Sheraton-Park Hotel, Washington. Address: Dr. John J. Noone, Executive Secretary, 5201 Connecticut Ave., N.W., Washington, D.C. 20015.

May 28–30: American Ophthalmological Society. The Homestead, Hot Springs, Va. Address: Dr. Samuel D. McPherson, Jr., Secretary, 1110 West Main Street, Durham, N.C. 27701.

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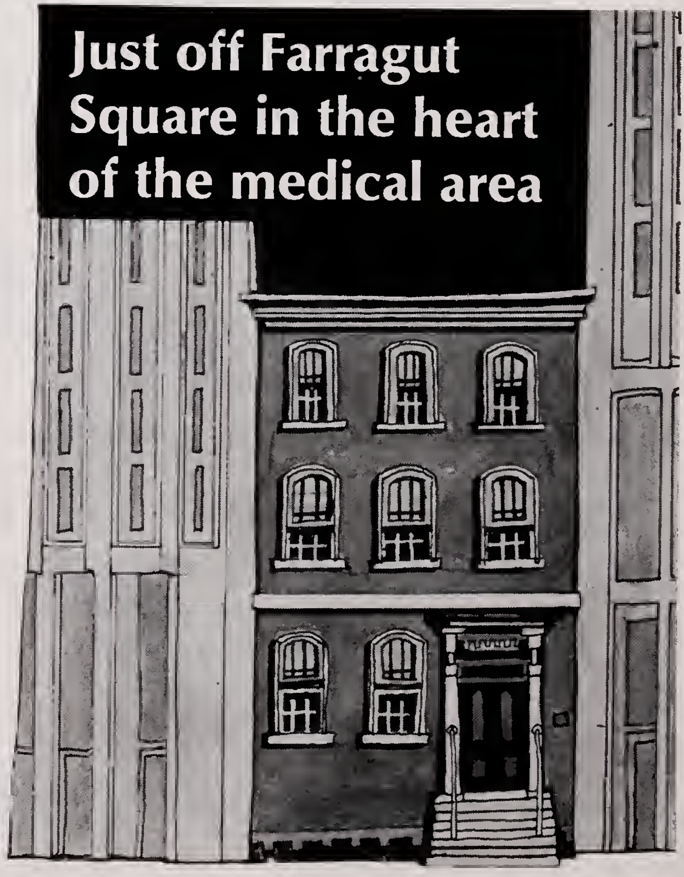
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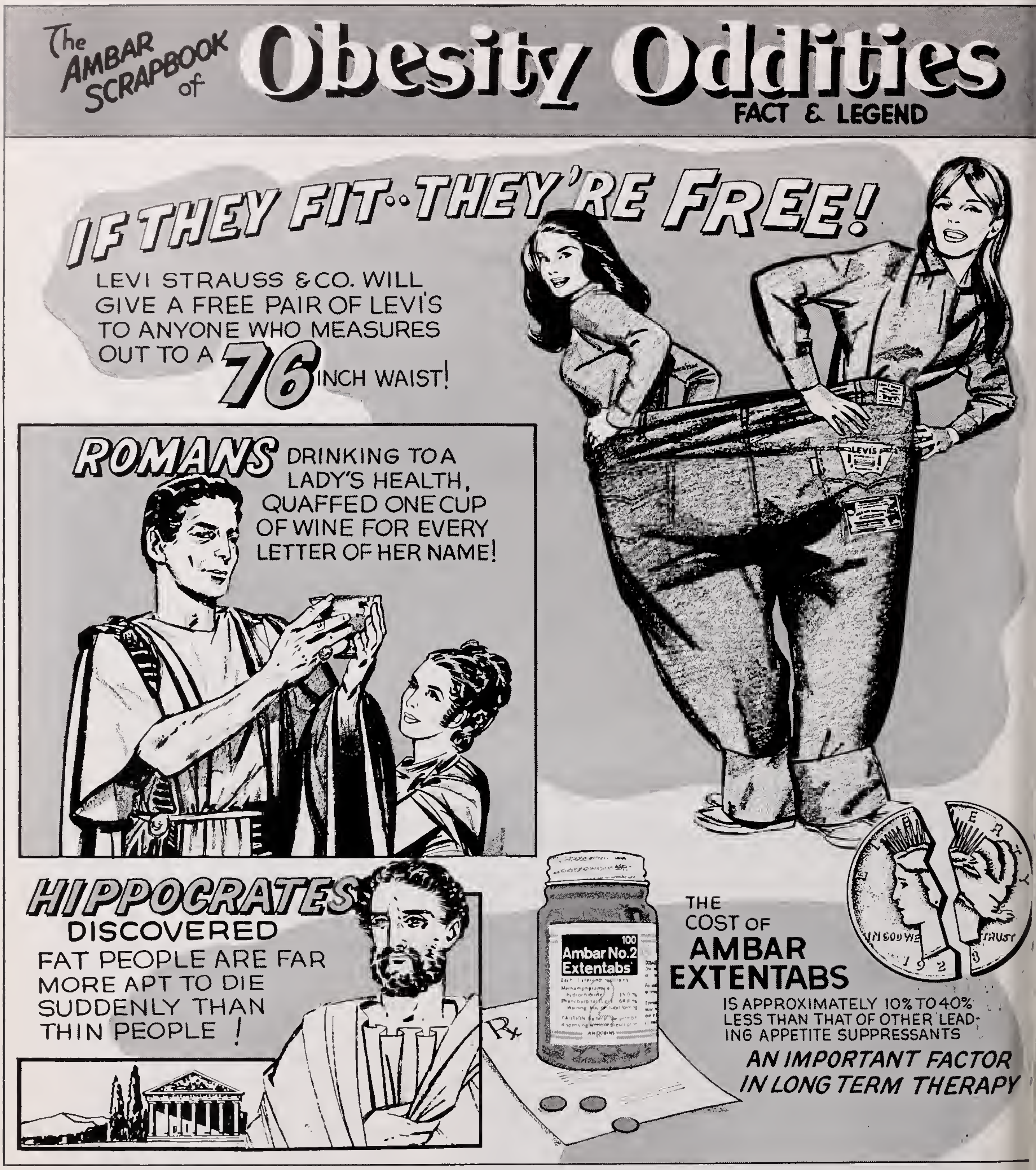
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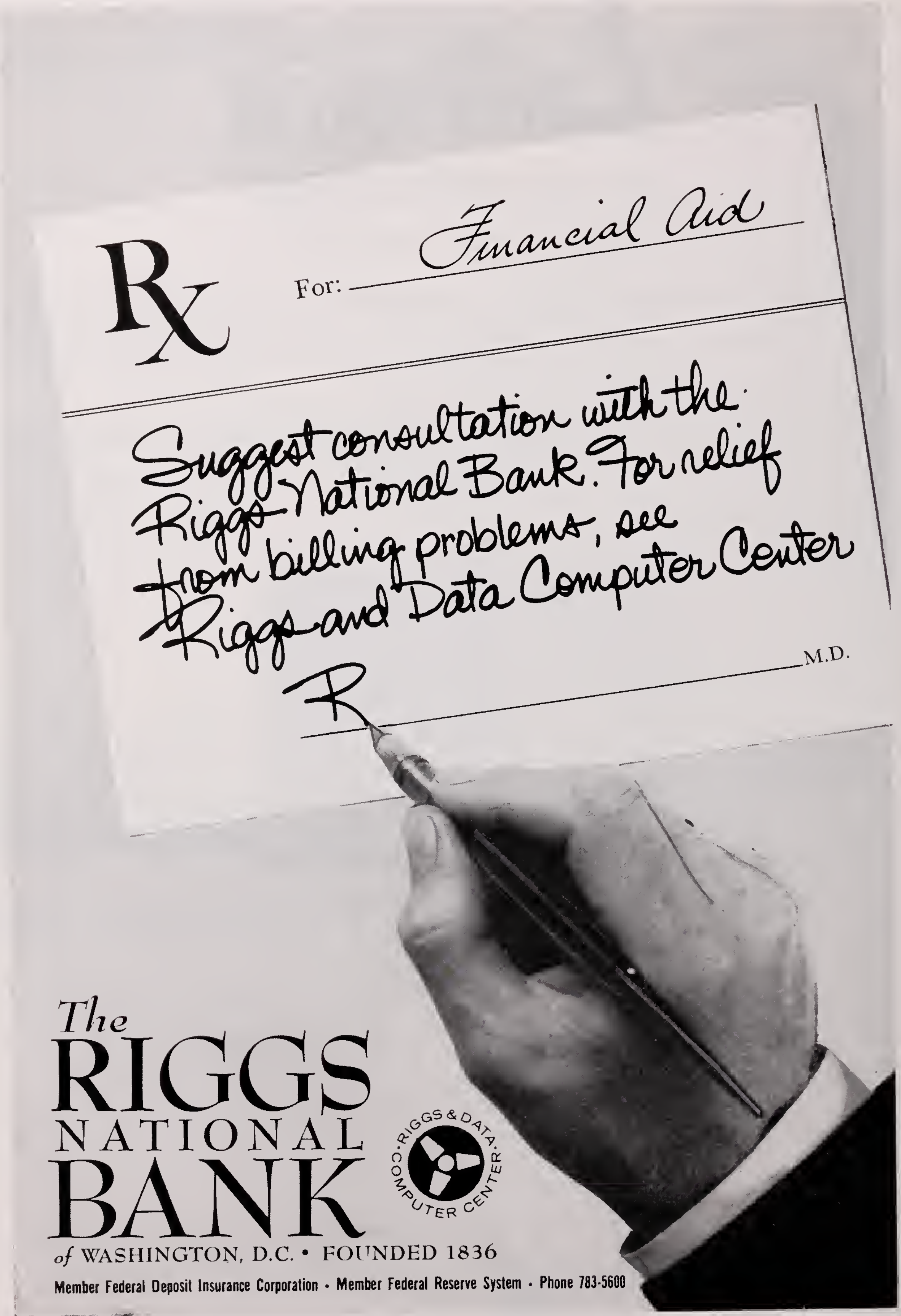

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Yearly Subscription, $8.00
Single Number, 75¢

Second-class postage paid at Baltimore, Md.
Published monthly at
Mount Royal and Guilford Avenues,
Baltimore, Maryland 21202

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Precautions Overgrowth of nonsusceptible organisms may occur Constant observation is essential If new infections appear, appropriate measures should be taken In infants, increased intracranial pressure with bulging fontanels has been observed. All signs and symptoms have disappeared rapidly upon cessation of treatment.

Side Effects Gastrointestinal system—anorexia, nausea, vomiting, diarrhea, stomatitis, glossitis, enterocolitis, pruritus ani. Skin—maculopapular and erythematous rashes, a rare case of exfoliative dermatitis has been reported. Photosensitivity, onycholysis and discoloration of the nails (rare) Kidney—rise in BUN, apparently dose-related. Transient, reversible, nephrogenic diabetes insipidus with excessive thirst and polyuria (rare) Hypersensitivity reactions—urticaria, angioneurotic edema, anaphylaxis. Teeth—dental staining (yellow-brown) in children of mothers given this drug during the latter half of pregnancy, and in children given the drug during the neonatal period, infancy and early childhood Enamel hypoplasia has been seen in a few children If adverse reaction or idiosyncrasy occurs, discontinue medication and institute appropriate therapy Demethylchlortetracycline may form a stable calcium complex in any bone-forming tissue with no serious harmful effects reported thus far in humans

Average Adult Daily Dosage One tablet b i d Should be given 1 hour before or 2 hours after meals, since absorption is impaired by the concomitant administration of high calcium content drugs, foods and some dairy products Treatment of streptococcal infections should continue for 10 days, even though symptoms have subsided.

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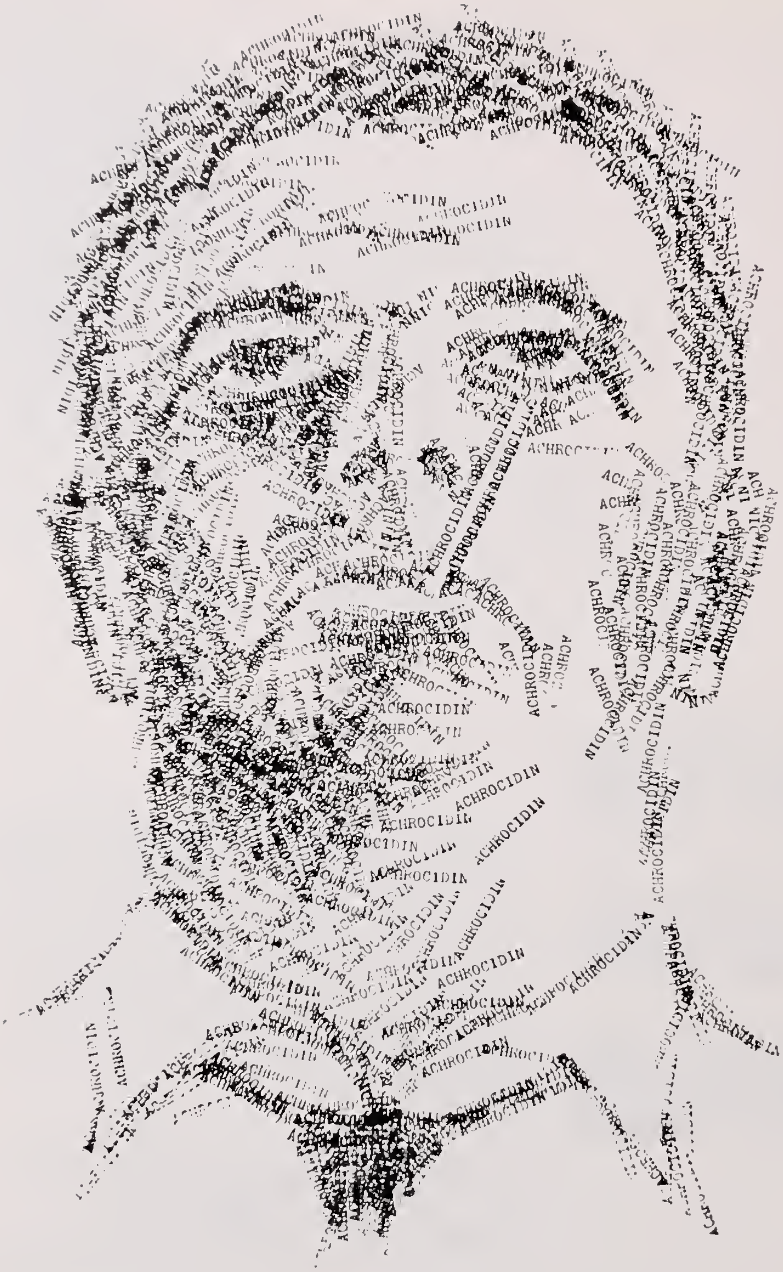

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Warning: In renal impairment, since liver toxicity is possible, lower doses are indicated; during prolonged therapy consider serum level determinations. Photodynamic reaction to sunlight may occur in hypersensitive persons. Photosensitive individuals should avoid exposure; discontinue treatment if skin discomfort occurs.
Precautions: Drowsiness, anorexia, slight gastric distress can occur. In excessive drowsiness, consider longer dosage intervals. Persons on full dosage should not operate vehicles. Nonsusceptible organisms may overgrow; treat superinfection appropriately. Treat beta-hemolytic streptococcal infections at least 10 days to help prevent rheumatic fever or acute glomerulonephritis. Tetracycline may form a stable calcium complex in bone-forming tissue and may cause dental staining during tooth development (last half of pregnancy, neonatal period, infancy, early childhood).
Adverse Reactions: *Gastrointestinal*—anorexia, nausea, vomiting, diarrhea, stomatitis, glossitis, enterocolitis, pruritus ani. *Skin*—maculopapular and erythematous rashes; exfoliative dermatitis; photosensitivity; onycholysis, nail discoloration. *Kidney*—dose-related rise in BUN. *Hypersensitivity reactions*—urticaria, angioneurotic edema, anaphylaxis. *Intracranial*—bulging fontanels in young infants. *Teeth*—yellow-brown staining; enamel hypoplasia. *Blood*—anemia, thrombocytopenic purpura, neutropenia, eosinophilia. *Liver*—cholestasis at high dosage.
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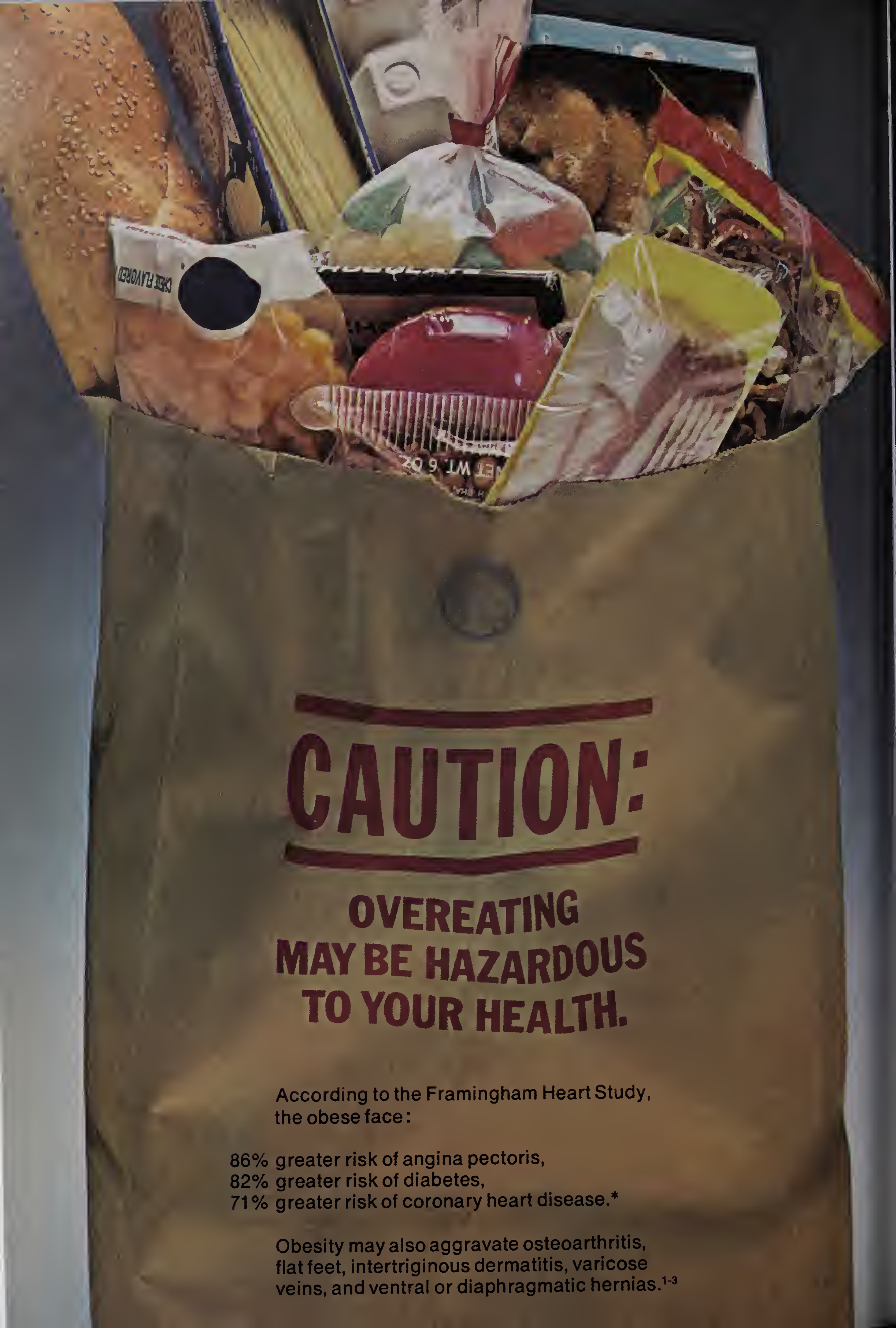
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1. Kannel, W.B., *et al.*: *Circulation* 35:734, 1967.
2. Thomas, H.E., Jr., *et al.*: *Med. Times* 95:1099, 1967.
3. Albrink, M.J., in: Beeson, P.B. & McDermott, W. (eds.): *Cecil-Loeb Textbook of Medicine*, ed. 12, Phila.: W.B. Saunders Co., 1967.

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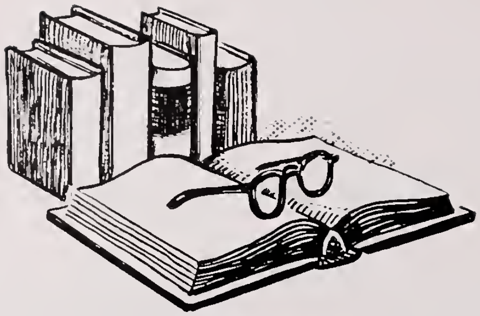

Book Reviews

Fundamentals of Inhalation Therapy. Donald F. Egan, M.D. Price, $11.00. Pp. 474, with 148 illustrations. St. Louis: Mosby, 1969.

Dr. Egan, the Medical Director and founder of one of the Nation's first schools of inhalation therapy, has worked in the field for over 8 years. He has drawn upon his extensive experience in order to present a comprehensive text for the student therapist. The physician with an interest in learning more of the mechanics and clinical applications of the various modes of inhalation therapy available will also find the book valuable.

Dr. Egan begins with a discussion of the physical behavior of gases and solutions. The presentations of blood gases, gas transport, acid-base balance, and effects of pathology in these areas are succinct and quite lucid. His discussion of ventilation perfusion abnormality, a most important clinical cause of hypoxemia, may in itself be worth the price of the book. The author does not attempt to enumerate the pathophysiology of each cardiopulmonary disease state. He contents himself with a discussion of pulmonary obstructive and restrictive disorders in general and their physiologic implications.

As expected, there is a large area of the book concerned with inhalation therapy techniques. The rationale of aerosol and humidity therapy, the medical gases and their modes of administration, CO_2 and oxygen therapy and toxicity, and a discussion of mechanical ventilators are included. Of special interest to the physician is a discussion of the physiologic effects of mechanical ventilation on the various organ systems of the body—effects that may not be well known to the practitioner. A section on the pharmacology of drugs that may be administered by aerosols appropriately mentions the controversy over the efficacy of certain medications given through this route. The final chapter on ventilatory failure distinguishes itself from the numerous treatments of the subject by its specific references to practical maneuvers to be employed. Dangers of endotracheal tubes and tracheostomy, the management of weaning a patient from a respirator, and a discussion of the clinical and physiologic monitoring of the patient are included.

In summary, Dr. Egan has succeeded in producing a book which, I am sure, will long be regarded as the definitive text in the field of inhalation therapy. I hope that in future editions additional photographs and illustrations will be included. I recommend this book to the physician who faces clinical problems in cardiopulmonary diseases and is therefore involved in respiratory care. A greater understanding of the physiologic rationale of inhalation therapy can help the clinician feel more comfortable in its use.

Bernard Grand, M.D.

Handbook of Ocular Therapeutics and Pharmacology, 3rd ed. Philip P. Ellis, M.D., and Donn L. Smith, M.D., Ph.D. Price, $10.75. Pp. 251. St. Louis: Mosby, 1969.

This Handbook is divided into 2 parts. The first part, on therapeutics, presents some basic approaches to the medical therapy of most ocular disorders. The second part, on pharmacology, emphasizes the routine medications prescribed by the clinical ophthalmologist.

The resident ophthalmologist will find this Handbook very convenient and informative. However, he should not make the mistake of considering it a replacement for texts with more extensive coverage. This Handbook could serve as a good outline for those preparing for Board examinations.

The material is well organized; drug dosages and indications can be found quickly. There are several concise tables comparing the various dosages and side-effects.

For the most part the material covered is familiar to the practicing ophthalmologist. The neophyte resident will reap the greatest value from this book.

Ernest M. Zimmerman, M.D.

Crisis Fleeting—Original Reports on Military Medicine in India and Burma in the Second World War. Compiled and edited by James H. Stone. Price, $3.75. Pp. 423. Washington, D. C.: Office of the Surgeon General, Department of the Army, 1969.

This most recent addition to the medical history of World War II is compiled and edited by James H. Stone, Historical Unit, United States Army, Medical Department. It concerns the activities of the United States Army Medical Services in India and Burma in World War II. The book is divided into 4 sections, called books. The first section is called the North Tirap Log. This is no more than a day-by-day diary written by an Army Medical Corps Sergeant who was assigned to an obscure camp on a minor trail in North Burma in 1943. Nothing of any importance happens in this chapter although it does indicate the tedium and boredom of such an isolated jungle camp.

(Continued on page 19)

I love my family.
I adore this house.
My in-laws are great.
The neighbors are wonderful.

Indications For use in management of anxiety and tension occurring alone or as accompanying symptom complex to medical and surgical disorders and procedures Though not a hypnotic, fosters normal sleep through antianxiety and related muscle-relaxant properties

Contraindications History of sensitivity to meprobamate

Important Precautions. Carefully supervise dose and amounts prescribed, especially for patients prone to overdose themselves. Excessive prolonged use has been reported to result in dependence or habituation in susceptible persons, as alcoholics, ex-addicts, and other severe psychoneurotics After prolonged excessive dosage, reduce dosage gradually to avoid possibly severe withdrawal reactions Abrupt discontinuance of excessive doses has sometimes resulted in epileptiform seizures

Warn patients of possible reduced alcohol tolerance, with resultant slowing of reaction time and impairment of judgment and coordination.

Reduce dose if drowsiness, ataxia or visual disturbance occurs; if persistent, patients should not operate vehicles or dangerous machinery.

Side Effects include drowsiness, usually transient; if persistent and associated with ataxia, usually responds to dose reduction; occasionally concomitant CNS stimulants (amphetamine, mephentermine sulfate) are desirable. Allergic or idiosyncratic reactions are rare, but such reactions, sometimes severe, can develop in patients receiving only 1 to 4 doses who have had no previous contact with meprobamate. Previous history of allergy may or may not be related to incidence of reactions Mild reactions are characterized by itchy urticarial or erythematous maculopapular rash, generalized or confined to groin. Acute nonthrombocytopenic purpura with cutaneous petechiae, ecchymoses, peripheral edema and fever have been reported. One fatal case of bullous dermatitis following intermittent use of meprobamate with prednisolone has been reported. If allergic reaction occurs, meprobamate should be stopped and not reinstituted. Severe reactions, observed very rarely, include angioneurotic edema, bronchial spasms, fever, fainting spells, hypotensive crises (1 fatal case), anaphylaxis, stomatitis and proctitis (1 case) and hyperthermia Treat symptomatically as with epinephrine, antihistamine and possibly hydrocortisone. Aplastic anemia (1 fatal case), thrombocytopenic purpura, agranulocytosis and hemolytic anemia have occurred rarely, almost always in presence of known toxic agents. A few cases of leukopenia, usually transient, have been reported on continuous administration.

Meprobamate may sometimes precipitate grand mal attacks in patients susceptible to both grand and petit mal. Extremely large doses can produce rhythmic fast activity in the cortical pattern. Impairment of accommodation and visual acuity has been reported rarely. After excessive dosage for weeks or months, withdraw gradually (1 or 2 weeks) to avoid recurrence of pretreatment symptoms (insomnia, severe anxiety, anorexia). Abrupt discontinuance of excessive doses has sometimes resulted in vomiting, ataxia, tremors, muscle twitching and epileptiform seizures. Prescribe very cautiously and in small amounts for patients with suicidal tendencies. Suicidal attempts have resulted in coma, shock, vasomotor and respiratory collapse and anuria. Excessive doses have resulted in prompt sleep; reduction of blood pressure, pulse and respiratory rates to basal levels; and occasionally hyperventilation. Treat with immediate gastric lavage and appropriate symptomatic therapy. (CNS stimulants and pressor amines as indicated). Doses above 2400 mg./day are not recommended.

Composition: Tablets, 200 mg. and 400 mg. meprobamate. Coated Tablets, WYSEALS* EQUANIL (meprobamate) 400 mg. (All tablets also available in REDIPAK* [strip pack], Wyeth.) Continuous-Release Capsules, EQUANIL L-A (meprobamate) 400 mg.

The young homemake
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and tension can surfac
and intensify under the
continuous stress of
rearing a growing fami
Especially when she's
confined to the home a
its environs so much.

You can help her over
the rough spots with
reassurance and couns
Equanil can help reliev
tension, ease anxiety—
with little risk of seriou
side effects. Time and
experience will probab
do the rest.

Equanil®
(meprobamat

Wyeth Laboratories
Philadelphia, Pa.
Wyeth ®

I'll scream
if I don't get away!

Photo professionally posed.

Book Reviews

(Continued from page 16)

The second book, "Chinese Liaison Detail," is a diary written by a Medical Corps officer assigned with the Chinese army in Burma. It also is rather boring and filled with names and dates. Scattered throughout are a few comments about the difficulties faced by an American liaison officer dealing as an advisor with army officers and enlisted men of an Oriental culture.

The third book, a diary of Colonel John Tamraz, is the office journal he wrote every day concerning his activities, mostly concerned with administrative difficulties. This particular chapter has very little in it to recommend reading.

The fourth book is not written by an American but rather by a British Army Medical Corps General and is his final report on the medical arrangements for the British Special Force, known as Windgate's Chindits, which fought behind enemy lines in North Burma in 1944. This is the first chapter, or book as it is called, that I can recommend reading. It discusses the medical problems of a Western army fighting in detached units in an Oriental jungle. There are many points brought up in this chapter concerning the relationship between the line of command and the Medical Corps. Most of Windgate's casualties were medical casualties, a good number of which were attributed to the failure of the line officers to accept the professional advice of their Medical Corps officers.

The last chapter, called "The Marauders and the Microbes," concerns Merrill's Marauders and is written by 2 Medical Corps officers assigned to the Marauders. These reports, submitted by these officers and later reviewed by a third officer, concerned the medical problems faced by Merrill's troops. They were actually protests sent to the Office of the Surgeon General, U.S. Army, at the conclusion of the engagement. They pointed out that Merrill's troops could have performed far better if they had been afforded better medical care and had not been forced to subsist for such long periods of time in active jungle warfare. Malaria and dysentery appeared to be the 2 most common diseases encountered, and there was some information on preventive medicine in jungle warfare which is applicable today in Southeast Asia.

In summary, the first 3 books, comprising over 200 pages, are uninteresting and I would not recommend reading them except by someone who wanted to look up a particular name or date for personal reasons. The last 2 chapters are more interesting, especially for the student of military history and those concerned with medical problems of Western troops fighting in Asiatic jungles. I can only recommend pages 201 to 396 as interesting reading for students of medical-military history.

Maurice J. Casey, M.D.

Symposium on Retina and Retinal Surgery—Transactions of the New Orleans Academy of Ophthalmology. Twelve contributors. Price, $29.50. Pp. 406, with 372 illustrations, including 12 color plates. St. Louis: Mosby, 1969.

This volume is a record of one of the postgraduate courses in ophthalmic subjects presented annually by the New Orleans Academy of Ophthalmology. The 1968 course, dealing with the subject of detachment of the retina, covers both theoretical and practical considerations and was presented by well-recognized authorities in the field from various sections of the United States and from Germany and England.

The book contains little that is not already published elsewhere, but it is an excellent compilation of much of the current thought on this subject. It is, therefore, a valuable reference book for those already well versed in the subject and has much to offer those ophthalmologists who do not perform detached retina surgery. The first 7 of the 22 chapters contain valuable information for any ophthalmologist. These chapters have to do with the topography of the retina and clinical correlations, a history of the evolution of concepts related to retinal detachment, techniques of examination of the retina, differential diagnosis of retinal detachment, techniques of vitreous cavity examination, and a description of the various types of retinal degenerations. The last chapter is a general summary of the symposium and the addendum covers the round-table discussion. Other chapters cover the various types of detachments encountered and the various types of surgical procedures; there are also chapters on complications, pathology, experimental retinal detachment and reattachment.

Throughout the book there are many valuable pointers for even the most seasoned detached retina subspecialist or specialist. Especially stimulating are the general summary by Dr. Bradley R. Straatsma and the round-table discussion by the entire panel.

Harry M. McAllister, M.D.

Fluorescein Angiography of the Retina: Textbook and Atlas. Achim Wessing, M.D. Translated by Gunter K. von Noorden, M.D. Price, $23.00. Pp. 222, with 463 illustrations in 120 figures. St. Louis: Mosby, 1969.

One valid indication for a monograph is the development of a new medical tool which promises continuing use. The author's qualifications are certainly acceptable —over 5 years of active participation in the field and a survey of about 600 sets of angiograms. The references and survey of the literature appear complete. The developers of the technique are given due credit. The historical review is adequately stressed. The readability is excellent and some of the credit for this must go to the also indubitably qualified translator, Gunter K. von Noorden.

This book promises to become a classic.

John R. Weimer, M.D.

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May 1970

VOLUME XXXIX • NUMBER 5

Maternal and Congenital Rubella—Past, Present and Future

BROCKETT MUIR, JR., M.D.*

IN THE MORE than the quarter century since Gregg,[1] in Australia, made the first observation suggesting a causal relationship between maternal infection with rubella and the occurrence of cataracts, it has been discovered that the list of anomalies includes congenital heart lesions, deafness, microcephaly, mental retardation, hepatosplenomegaly, thrombocytopenia, jaundice, pneumonitis, radiolucency of the long bones and chronic infection during the newborn period (figure 1).[2-6]

Recently the occurrence of maternal rubella after the first trimester has been reported to cause more subtle but nevertheless troublesome defects in children; half of the children of 24 women with clinical and laboratory evidence of rubella between the fourteenth and thirty-first weeks of pregnancy showed significant problems not apparent at birth or in the immediate perinatal period. The most consistent problem seems to be loss of hearing sensitivity in the middle frequency ranges, discovered with auditory screening tests at 4 and 12 months of age.[7] Other less striking associations are made between second trimester rubella and include increased incidence of indirect inguinal hernia requiring surgical correction in affected children.[8]

Estimates have indicated that the 1964–65 epidemics of rubella resulted in 10,000 to 30,000 abnormal pregnancies. Based on the studies of Lundstrom,[9] Dekaban,[10] and the Collaborative Perinatal Research, we can estimate 1,000 to 2,000 stillbirths and neonatal deaths, 3,000 to 5,000 children with visual damage, 3,000 to 5,000 with congenital heart disease, 1,000 to 3,000 with deafness, and 1,000 to 3,000 with mental retardation probably occurred. There would be an additional 3,000 to 8,000 abortions and other abnormalities.[9, 11]

The frequency of abnormal pregnancy outcomes is approximately 50 per cent if rubella occurs in the first month of pregnancy, 22 per cent if it occurs in the second month, and 6 to 8 per cent if it occurs in the third month (figure 2).[12]

In addition to producing malformations, rubella may result in chronic infection of the placenta and child.[13]

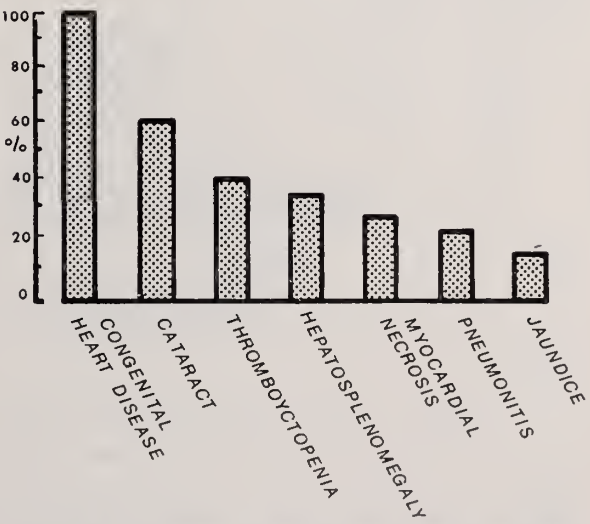

FIG. 1. Frequency of abnormalities in the expanded congenital rubella syndrome.[3-13]

Transmission of maternal infection to the human fetus was first demonstrated by Selzer[12] in 1963. A fetus obtained at therapeutic abortion from a woman who was infected in the first trimester of pregnancy revealed the presence of virus. Selzer did not find evidence of genetic change in the fetus. This work was confirmed and extended by Alford[13] who demonstrated the persistence of infection in children born of mothers with rubella. In addition, he stressed a higher rate of recovery from the fetuses. Monif et al[14] examined 50 abortus materials in detail and found 2 primary patterns of recovery; a limited pattern involved only the placenta, while the disseminated pattern involved almost all of the organs of the fetus. In this study over 60 per cent of the fetuses tested were positive for virus. When analyzed in terms of those patients for whom rubella was documented by laboratory tests, almost 100 per cent of the fetuses of these pregnancies revealed the presence of virus. It was hypothesized that the disseminated form which occurred in approximately 30 per cent of the fetuses may truly represent the form of the infection which may produce congenital malformations or congenital rubella of the newborn.

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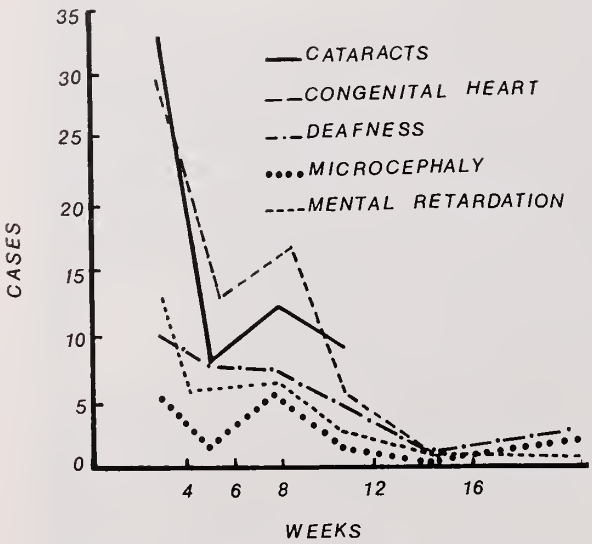

FIG. 2. Abnormalities in 108 affected offspring related to time of maternal rubella during pregnancy.[10]

The children remain infected after birth, and more than 30 per cent still show infection of the nasopharynx at 6 months of age. By 1 year of age less than 10 per cent remain infected (as detected in the nasopharynx); however, these are usually the most severely affected children. Infection usually persists longer in the eye than in the pharynx. Children who die of congenital rubella in the first month of life have infection throughout almost all of their organs.

Along with infection, these children with congenital rubella also have neutralizing antibody in their sera in utero and this persists after birth, apparently for life.[15] The immunologic problem of simultaneous infection in the presence of antibody remains to be explored. Clinically the children may also show extensive tissue involvement of multiple organs.

Most of the signs of hepatosplenomegaly, jaundice, thrombocytopenia, petechiae, ecchymoses, pneumonitis, and radiolucency of long bones disappeared in 1 to 6 months; however, 10 to 20 per cent of the children die with hepatitis, encephalitis, or myocarditis.[16] These children tend to be smaller and frequently are somewhat microcephalic. The clinical findings appear to relate, at least in part, to an actual decrease in the number of cells present in the affected tissues.[15]

With congenital infection, neutralizing antibody (gamma G) has been detected in the fetus as early as the fifth month of gestation. At birth the child has neutralizing, fluorescent and CF titers similar to those of the mother and both gamma M and gamma G neutralizing antibodies.[17] The gamma G neutralizing antibody levels decrease over the first few months of life, and there is a simultaneous reduction in CF antibody, although neutralizing (gamma M) and fluorescent antibodies remain elevated. By the sixth month of life gamma G neutralizing antibody begins to increase, and this then persists indefinitely. In almost half of the cases studied, along with the increase in gamma G at 6 months of age there is a transient reappearance of CF antibody for at least 6 months. These cases, with the reappearance of CF antibodies, are usually severely affected children with poor prognoses.[13, 15]

In acquired (acute) rubella there is limited infection with virus in the nasopharynx for approximately 1 week before the rash period. Antibodies develop shortly after the rash; virus is in the blood and urine for 1 week before the rash.[18] Antibody develops shortly before the onset of the rash. The antibody response differs from that in congenital (chronic) infection. In acute infection neutralizing and fluorescent and CF antibody appear shortly after the onset of the rash. Neutralizing and fluorescent antibody persist indefinitely, while CF antibody tends to decrease after about 7 months. Ten to 20 years after the acute infection about 50 per cent of the individuals studied no longer have CF antibody.[17] This same pattern of development of antibody also occurs in rubella without a rash.

There has been considerable variation in the quality of the reporting of rubella. This is mainly due to the mildness of the disease produced by the virus and the fact that in most areas rubella is not a reportable infection.

In the United States data from the Communicable Disease Center since 1955 have been analyzed, and significant epidemics were noted in 1958 and in 1964-65. In the latter there was a movement of the disease from Northeast to West and South. Rubella occurred primarily in the spring of each year in most countries. Some of the largest epidemics have coincided with military mobilization. Epidemics generally occur at intervals of 5 to 10 years.

In a serologic study of 268 individuals who were in the general population of Montgomery County, Maryland in 1957 the frequency of antibody to rubella was determined (figure 3).

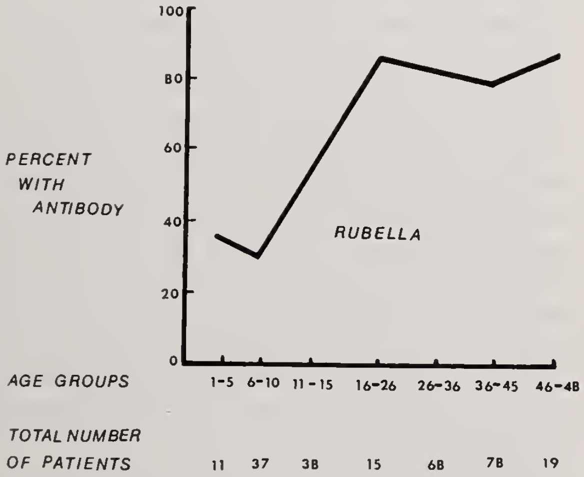

FIG. 3. Frequency of patients with antibody to rubella in Montgomery County, Maryland, 1957.

The frequency increased from approximately 35 per cent among children 1 to 10 years of age to 85 per cent in the age groups of 16 to 25 years and older. This indicates that approximately 15 per cent of the adult sample were susceptible to infection with the disease. This determination was made before the 1964 epidemic and the flurry of rubella activity in the summer of 1969.

In January 1969 a serologic survey demonstrated that 7 per cent of pregnant women tested from Baltimore and Memphis were at risk for rubella and that 31 per cent of the women from Los Angeles were susceptible. High rates of women at risk were also found in Hawaii and Puerto Rico. In studies of 30,000 pregnant women in a Collaborative Perinatal Research Study the frequency of clinical rubella was approximately 1:1000 during nonepidemic years.[19] During the 1964 epidemic, however, the incidence rose to approximately 22:1000.[20] In a serologic study of 500 pregnant patients during the 1964 epidemic 68 per cent were immune, 2.6 per cent had clinical rubella serologically confirmed, and 1.2 per cent had inapparent infection which was detected serologically (figure 4).[21] It is probably safe to assume that between 10 and 20 per cent of all women in the childbearing years in the Metropolitan Washington, D. C. area are at risk at this time. The next significant epidemic of rubella in this country may be expected in 1970 or 1971.[22]

Since the introduction of rubella antibody determination with the indirect neutralization tests 3 additional serologic tests have been developed, FA, CF and HAI. Unfortunately, both CF and FA tests show loss of detectable antibody or weakening of fluorescence with specimens taken more than a few months after infection. This factor reduces their value in determining past infection and susceptibility. The HAI is the most recent and perhaps the most accepted test. This test technique is rapid to perform and consistently gives much higher titers than the other methods.[23]

For the serologic diagnosis of acute acquired rubella all 4 tests are suitable. However, as mentioned, HAI and CF have some advantage over the others.

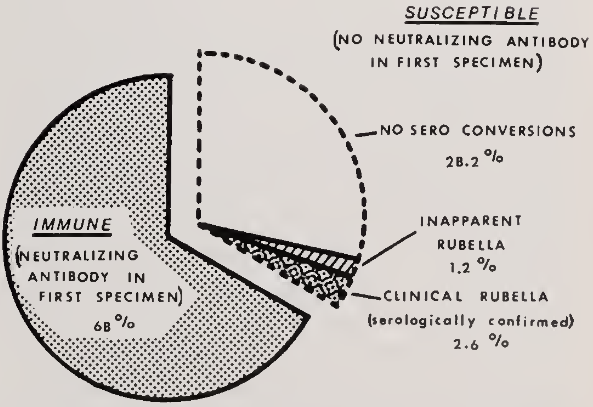

FIG. 4. Results of serological study of 500 pregnant patients during 1964 epidemic (Sever[20]).

To determine individual susceptibility to rubella virus, the HAI and neutralization tests are most useful, since these antibodies seem to persist for life. The laboratories we use are presently employing the HAI technique, which has the practical advantage of "same day" results and is a reliable determinate of immunity. Reliance on a history of rubella as a means of determining present individual immunity has been shown to be worthless.[22, 24]

In a rather striking effort entailing coöperative use of resources by government and business there is now a live attenuated vaccine for rubella which is currently being given to school-age children. Apparently it is a safe vaccine in this age group, and it is hoped that it will produce long-lasting immunity.[25, 26] Early vaccine materials shed virus extensively in the throat of the individuals who received them, but this problem seems largely to have been worked out.

The current strain appears to be particularly safe and nontransmissible. Obviously continuing study and reëvaluation will be necessary to determine the exact extent to which this is so, and to just what extent our program of immunization may be counted upon to reduce or eliminate epidemics. The obvious final evaluation for this vaccine will be that it not increase the incidence of rubella in the community where it is being tried. Field studies are now in progress in which the state of immunity of individuals is known. Progressive testing is underway, and it is hoped that it can be unquestionably shown that the present vaccine strain causes infection without any shedding.

Unfortunately, none of the vaccines currently considered for administration to women of childbearing age has been established as safe for pregnant women and the human fetus. Animal tests cannot establish this characteristic of the vaccine because the properties in humans may be quite different.

If an epidemic occurs in 1970 to 1971 the live vaccine material now available cannot be given, and there may be no way to protect susceptible women among the more than 4 million who may be expected to be pregnant. It is possible, therefore, that a repeat of the events of 1964-65 will occur if the epidemic develops at that time.

So the control and prevention of rubella and its teratogenic effect appear to be in sight. The vaccine now in use will need to be evaluated in terms of the following properties: (1) Fully attenuated. No possible transfer from immunized individuals to contacts, (2) no contaminating agents, (3) long-lasting immunity.

There is a definite need for a killed vaccine for rubella. The vaccine should have the following properties: (1) Completely inactivated, (2) no contaminating agents, (3) rapid immunity, lasting for at least months, preferably years. Even if the immunity were short the vaccine would still be of value for protecting pregnant women during epidemic periods.

Although gamma globulin is not 100 per cent effective in the prevention of rubella syndrome defects, there is considerable evidence that it is at least partially effective.[27, 28] The true efficacy of high-titered gamma globulin given early after exposure in high dosage is now under study. The use of gamma globulin does, however, reduce the occurrence of clinical disease.[29] Therefore, when gamma globulin is studied, paired serum specimens should be obtained so that appropriate tests can be performed to detect subclinical infection. The first serum should be used just before the gamma globulin is given, and the second serum 1 month later. With the development of antibody determinations we now have the basis for a solid management of the pregnant patient who has been exposed to German measles.[14]

As has been mentioned, the ultimate answer to the problem may lie in a comprehensive program of live-virus immunization. The current emphasis is upon a virus prepared from Meyer and Parkman's attenuated strain of rubella virus, HPV-77, adapted to and propagated in duck embryo-cell culture from passage 5.[30-42] It is indicated for boys and girls from age 1 to puberty. It is not recommended for infants less than a year old because they may retain maternal rubella neutralizing antibodies which may interfere with the immune response. Children in kindergarten and the first grades of elementary school are considered to deserve priority for vaccination because often they are epidemiologically the major source of virus dissemination in the community.

Pregnant women must not be given any live attenuated rubella virus vaccine. Since it is not known to what extent infection of the fetus with attenuated virus might take place following vaccination, or whether damage to the fetus could result, routine immunization of postpubertal females should not be undertaken because of the danger of inadvertently administering vaccine before pregnancy becomes evident.

Women of childbearing age should not be considered for vaccination unless there is no possibiiity of pregnancy in the subsequent 3 months; each case must be considered individually. This cautious approach to vaccinating postpubertal females is indicated for 2 reasons: first, because of the potential risk of vaccination in pregnancy; and second, because significant congenital abnormalities occur regularly in approximately 3 per cent of all births, and their fortuitous appearance after vaccine has been given during pregnancy could lead to serious misunderstanding.

If vaccination of a woman of childbearing age is contemplated, the following procedure is recommended: Optimally, the patient should be tested for susceptibility to rubella; if immune, vaccination is unnecessary. If susceptible, she may be vaccinated only if she understands that it is imperative for her not to become pregnant for the next 3 months. To ensure this, a medically acceptable method for pregnancy prevention must be followed. This precaution also applies to women in the immediate postpartum period. Additionally, she should be informed of the frequent occurrence of self-limited arthralgia and possible arthritis beginning 2 to 4 weeks after vaccination.

Rubella vaccination should also be withheld from patients with malignant lesions, gammaglobulin deficiency, or those receiving therapy with corticosteroids, irradiation, alkylating agents or antimetabolites because of their alteration of normal defense mechanisms.

Of utmost concern is the management of the patient who becomes pregnant in the next few years, before the program of vaccination becomes effective. In my practice I am finding it advantageous to draw a rubella-antibody determination on each prenatal patient who comes under my care. This is valid for 2 reasons: First, because, as has been mentioned, between 80 and 90 per cent of those who register can be demonstrated by this means to be immune, and appropriate reassurances can be given; and second, I believe it important now to watch closely those who are susceptible. Not only is an epidemic forecast, but the vaccination program now under way carries its own potential hazard. Excretion of the live rubella virus from the throat has occurred in the majority of susceptible individuals administered the vaccine. There is no definite evidence yet to indicate that such virus is nontransmissible and may be contagious to susceptible persons who are in contact with the vaccinated individuals. There is the theoretical possibility that this may occur and, if so, could constitute a risk to the susceptible pregnant woman.

Optimum management of the gravida who has known or suspected exposure is a bit more involved.[43] A specimen of maternal serum should be collected immediately and divided into 3 aliquots —1 for immediate testing, another for later testing, and a third to be held in reserve. All samples should be frozen except those to be tested within the next 2 or 3 days.

If the serum which is tested immediately proves to contain antibodies to rubella, the patient can be assumed to be immune and protected and no further studies are necessary. If no antibodies are found, the mother must be followed clinically for at least 1 month with frequent examinations for lymphadenopathy and rash.

The second sample serum should be collected 4 weeks after the last day of possible exposure to rubella. This should be tested for antibodies simultaneously with the second aliquot of the initial "pre" specimen. If a clinical or subclinical infection has taken place, an antibody will be found in the "post" but not in the "pre" serum in the phenomenon known as seroconversion.

Human immune globulin should be adminstered to the mother as soon as possible after the exposure is recognized. A reasonable dose is 20 ml. and whenever possible should be from a lot known to possess high levels of rubella antibody. It has been observed that such administration of gamma globulin will not give rise to the protectable antibody levels in the serum.

Thus, the serologic tests remain valid for documenting intercurrent infection even when gamma globulin has been administered. Hence, with this situation, prepared serum samples should be obtained. The first should be taken just prior to the administration of the gamma globulin and the second 1 month later.

The reliability of gamma globulin in the prevention of rubella has been the source of continuing, and as yet unresolved, controversy. One study has demonstrated a 50 per cent reduction in the incidence of infection among susceptible children given relatively large doses of gamma globulin. The principal argument for giving gamma globulin to pregnant women exposed to rubella is that it may sometimes prevent maternal infection and hence the effects on the fetus. The main argument against its use is that infection may be masked through amelioration of clinical symptoms without any protection to the fetus.

If the mother is already ill, the diagnosis can be made from clinical findings in conjunction with the serologic approaches previously described. The diagnosis may be confirmed by isolation of the rubella virus from the posterior pharynx. This method, though efficient, is expensive, technically difficult, and may take 2 to 8 weeks. The experienced clinician may be able to diagnose the illness with some accuracy on the basis of clinical findings alone. The differential diagnosis includes scarlet fever, throat infections, rubeola, and other viral infections. A rash not accompanied by the characteristic lymphadenopathy is not likely to be rubella. Rubella may occasionally be difficult to distinguish from rubeola; the latter diagnosis is statistically quite unlikely, since almost all women are immune to measles by the time they reach childbearing age. With subclinical rubella manifested only by lymphadenopathy, the differentiation from infectious mononucleosis may be difficult. Such cases are particularly important, since the so-called "heterophile-negative" cases of infectious mononucleosis may actually be instances of primary toxoplasmosis, cytomegalovirus infection, or another maternal illness which may present a significant hazard to the fetus.

Immune globulin is of no value once rubella is clinically established. Therefore, when the gestational age is less than about 10 weeks, the question of therapeutic abortion is frequently considered. In such a situation both the patient and physician must weigh not only the risk to the fetus, which declines according to the gestational age at the time of maternal illness (figure 2), but the opportunity for future pregnancies, moral and religious convictions, legal or community regulations, and the personal hopes and fears which are involved. Each case must be resolved individually. If the vaccination program is successful, in the future we may not have to grapple with this difficult decision.

Summary

The development of knowledge concerning the causal relationship between maternal infection with rubella and congenital abnormalities in the newborn has been reviewed. The most significant recent demonstration is that rubella in the second trimester may be associated with troublesome defects in children, mainly loss of hearing sensitivity in the middle-frequency ranges.

The scope of fetal damage during the 1964–65 epidemic and the results of pertinent studies made during that time have been reviewed. We now know much more about the dissemination of the virus, the nature of the fetal abnormalities caused by it, and the response of several types of antibodies in the adult and in the infant who has congenital rubella. The interesting observation of simultaneous infection in the presence of CF antibody in congenital rubella has not been explained.

The epidemiology of rubella suggests the possibility of another epidemic in 1970–71. The control will for the most part be based upon the efficacy of the current program of immunization with attenuated live-virus vaccine. The need for a killed-virus vaccine as well is noted, and the present place of high-titered gamma globulin has been discussed.

The guidelines for the immunization of children and adult women and the reason for giving priority to children of both sexes in kindergarten and the first grades of elementary school have been reviewed. The question of possible transmission from vaccinated individuals and the problem and hazard of inadvertently administering the vaccine to a woman before pregnancy becomes evident have been emphasized.

Current management of the susceptible gravida has been reviewed, noting that much of the guesswork is eliminated if intelligent use is made of the readily available HAI titers. The prognosis is considered to be bright.

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(*Continued on page 262*)

The Endoscopic Treatment of Pharyngeal Pouches and Webs*

WILLIAM M. TRIBLE, M.D.†

THE ENDOSCOPIC TREATMENT of hypopharyngeal diverticula (Zenker's) dates back over 60 years. In 1906 Mosher used a long knife to sever the wall between the pouch and the esophagus. Later Imperatori devised a method of pulling the pouch into an endoscope and ligating it. Both these techniques were abandoned because of fatal mediastinitis. Over 30 years ago Dohlman and Mattson[1] began using diathermic coagulation on the diverticulopharyngeal wall creating a wide surface defect. This approach is the most widely used endoscopic repair today, and nearly 150 cases have been reported in the literature without a death or serious complication.[2, 3, 4] Simpson[5] reported 20 additional cases using cutting diathermy alone without coagulation. I present 12 cases of Zenker's diverticulum and 3 post-laryngectomy pouches treated successfully with the Dohlman apparatus (figure 1).

Procedure

General endotracheal anesthesia is used. The Dohlman esophagoscope is inserted with its long beak in the esophagus and its short beak posteriorly in the pouch. This slotted instrument contains both proximal and distal lighting and a pole connector for the indifferent cable from the diathermy unit. Proper insertion tenses the dividing wall horizontally in the slot. This wall contains muscle fibers, mainly cricopharyngeal sphincter, as well as the mucosa of the pouch and esophagus. An insulated alligator-toothed forceps, with the active cable attached, is inserted through the esophagoscope and closed firmly on the dividing wall. Without releasing, the wall is "cooked" until a grey coagulum appears at the edge of the forceps. A setting of "55" coagulating current on the Bovie electrosurgical unit works well. The view is obscured by steam but is easily cleared by suctioning. Probably, if nothing further was done, the procedure would be successful because there is a large defect, sealed at the edges, which would certainly slough away. The spoon-shaped insulator is inserted posteriorly. The active cable is attached to the insulated knife (Bovie cutting current at "30"), which is used to cut the desiccated tissue from anterior to posterior, pressing down on the protective spoon-shaped insulator. The dividing wall is visibly cut a distance of 2½ to 3 cm. A pledget of gelfoam may be inserted between the minimally bleeding edges, and the operation is terminated in well under 5 minutes. Intravenous feedings are used for 2 to 3 days until the initial chest and back pain and the low-grade fever (101°) start subsiding. Clear liquids are given for 2 days, followed by a puréed diet, and hospital discharge on the fifth or sixth day. A regular diet is resumed after 2 weeks and instructions to chew well and take only small bites at first are given. Prophylactic antibiotics are

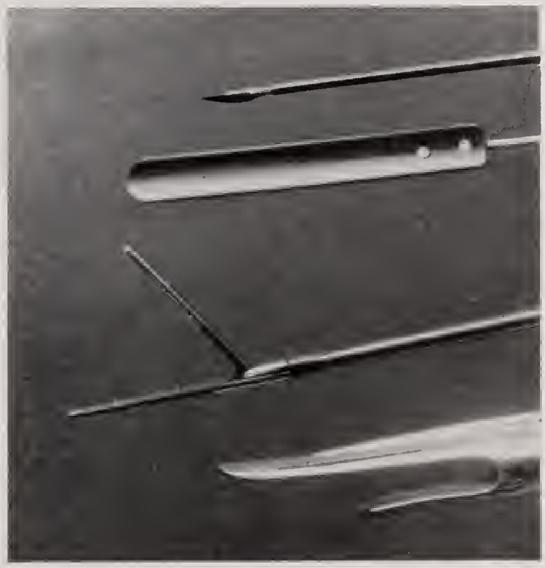

FIG. 1. The Dohlman instruments. From top to bottom: the insulated knife, the spoon-shaped insulator, the insulated alligator-toothed forceps, and the beak of the slotted esophagoscope.

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* Presented at the Ninth International Congress of Otolaryngology in Mexico City, August 13, 1969.

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given during the hospital stay, although Dohlman thinks this unnecessary because he had no infections in the pre-antibiotic era.

The first patient in this series was operated on June 1, 1959 and the most recent on July 9, 1969. The youngest patient was 54, most were over 60, and the oldest was 84. All had varying degrees of dysphagia, laryngeal spillage, choking, gagging, cough, bronchitis, and pneumonitis. Debilitation was extreme in 2 patients. One had spent 2 months in a Florida hospital to prepare for an external diverticulectomy, which was abandoned because of diabetes, heart, lung and liver disease. Another had been unable to swallow solids for 6 days, liquids for 3 days, had bilateral pneumonitis with a temperature of 104°F, and was referred with the incorrect diagnosis of "Hong Kong flu." Several patients expressed concern that the pills they took for other diseases were not being properly absorbed. All patients were operated on by the technique described, with improvement in symptoms ranging from miraculous to moderate. There were no failures or complications, and no patient has been reoperated. Symptomatic improvement is much greater than roentgenologic improvement; the pouch remains, and cinefluorography is necessary to demonstrate the improved emptying.

Comment

In a healthy, younger person the external operation (1-stage diverticulectomy) is probably still the treatment of choice, with an incidence of complications and failure of about 3 per cent. Reoperations are difficult and a hazard to the recurrent laryngeal nerve. Failure rate with the Dohlman procedure is quoted as 7 per cent, but reoperation is as simple and complication-free as the initial procedure.[1]

Contraindications are a lack of proper instruments, a pouch so small the dividing wall forms an angle too obtuse to fit the slot, and a pouch hanging well into the thorax with presumptive adhesions. The very small pouch is probably not very symptomatic, and the adherent thoracic pouch should receive some improvement by severing the cricopharyngeal fibers if external surgery is too risky.

Kirchner and Scatliff[6] found some sort of dysphagia related to pseudodiverticulum in 12 of 26 postlaryngectomy patients. These anterior pouches were invariably at the base of the tongue and represented healed salivary fistula or sinus formation. They retained up to 30 ml. of débris and were demonstrable on mirror examination or cinefluorography. None of their patients consented to operation, but the authors cited C. L. Jackson, who divided the "weblike formation" which forms the posterior lip of the pouch.

Three laryngectomized patients were treated by endoscopic electrosurgery 1 to 4 years after their operation. All had persistent dysphagia with demonstrable anterior pouches, and all had had numerous esophageal dilations with only transitory relief. In 2 the posterior wall of the pouch was a distinct thin web, but this was less distinct in the third, who had a smaller pouch. The dividing wall was treated as in Zenker's diverticulum, with modification of instrument placement to suit the case (figure 2). All patients stated that the symptomatic relief was much greater than that obtained from dilation.

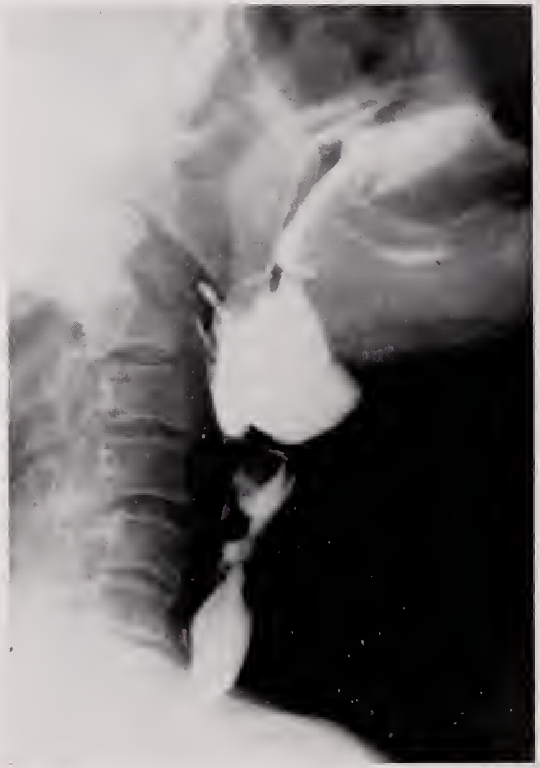

FIG. 2. Pseudodiverticulum at base of tongue in laryngectomized patient. Endoscopic division of web relieves dysphagia.

Conclusions

Endoscopic electrocoagulation and division of the dividing wall is the treatment of choice in most cases of hypopharyngeal pulsion diverticulum (Zenker's) who can tolerate a few minutes of anesthesia. Many laryngectomized patients complaining of dysphagia with well-delineated anterior pouches are similarly treatable.

(*Continued on page 262*)

Clinical Review of Vasa Praevia in a Ten-year Period

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One of the most tragic complications in obstetrical practice is vasa praevia. It occurs mostly in late pregnancy and affects chiefly the infant. Perinatal mortality is unusually high. The first report on velamentous insertion of the cord was made by Wrisberg in 1773, and Lobstein in 1801 described the clinical entity now known as vasa praevia. There have been few isolated cases in the obstetrical literature, the most significant of which was contributed by Torrey[1] in 1952. He classified the condition into 2 groups, namely, (1) the classical type wherein the velamentous cord vessel passes across the os in front of the presenting part and thereby predisposes to rupture or compression, and (2) abruptio of the umbilical vessel which includes rupture of the vessel in the absence of the condition present in vasa praevia. I consider it worthwhile to report the clinical experience of cases treated at the Columbia Hospital for Women, Washington, D. C. The Hospital has approximately 5,000 deliveries annually, and in reviewing the records for the past 10 years (1958–1968) we have encountered 6 cases of vasa praevia. Table 1 gives a summary of the cases.

TABLE 1: Summary of Cases

Case No.	Age (years)	Parity	Gestational Age (weeks)	Chief Complaint	Vital Signs	FHT*	Antepartum Diagnosis	Prognosis
1	26	Gravida II Para 1	36	Painless, bright red genital bleeding	Stable	100/min., irregular	Not made	Stillborn, markedly anemic
2	30	Gravida III Para 2	33	Painless, bright red genital bleeding	Stable	140/min. on admission; absent on second day	Low-lying placenta	Stillborn, markedly anemic
3	24	Gravida II Para 0	39	Labor contractions	Stable	130/min. on admission; 80/min. irregular with bloody amniotic fluid	Not made	Delivered by low cervical section; infant pale and in shock
4	35	Gravida I Para 0	32	Sudden bright red genital bleeding	Stable	None	Not made	Stillborn with marked pallor
5	32	Gravida IV Para 3	38	Irregular, mild uterine contractions	Stable	140/min. regular but became irregular after amniotomy; bloody amniotic fluid	Vasa praevia	Low-forcep delivery; markedly pale infant who later died
6	25	Gravida I Para 0	40	Sudden painless genital bleeding	Stable	120/min. and regular; later became bradycardiac and irregular	Not made	Low cervical section; infant stillborn, markedly pale

Note: Almost all the infants had postmortem examination; only patient no. 3 received blood transfusion. All diagnoses were made after delivery upon examination of the placenta except in case no. 5.

* Fetal heart rate and rhythm.

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Discussion

The incidence of vasa praevia remains relatively uncertain, and this probably reflects inaccurate documentation of medical records. Velamentous insertion of the cord has been known to occur from 0.24 to 1.25 per cent of deliveries.[2, 3] It is often associated with other abnormalities of the placenta such as infarcts, succenturiate lobe, bilobate placenta, and placenta praevia.[4] It is about 9 times more common in multiple pregnancy and almost always in triplets. It seems to have no relation to age, parity or congenital malformation, but there were more Caucasians in this series.

Why does velamentous cord insertion occur? Embryologists have different views to explain its occurrence. However, the theory advanced by von Franque seemed to have gained wide acceptance.[3] According to his opinion the area of vascularity in the capsularis portion may be the main source of blood supply during early gestation, but some of the vessels may persist even after the transfer of vascularity to the basilar portion of the decidua, and in this case the vessel will be seen extending across the lower uterine cavity covered by the membranes.

The most common symptom is painless, bright red genital bleeding accompanied by irregularity of the fetal heart rate. Administration of oxygen may temporarily improve the fetal heart pattern. Of our 6 cases only 2 were admitted in labor. Rupture of the umbilical vessel is usually followed by fetal tachycardia while, on the other hand, compression results in bradycardia. Vasa praevia does not necessarily mean there is genital bleeding, and fetal death can occur mainly from umbilical-vessel compression with resulting anoxia. This should be differentiated from placental insufficiency due to postmaturity or chronic hypertension. The use of fetal cardiac and pH monitor[5] is of great value in the differentiation. There are other obstetrical conditions that cause genital bleeding, and among them are ruptured marginal sinus, placenta praevia, abruptio placentae, and local cervicovaginal lesions. These conditions, however, are associated with signs and symptoms of blood loss in the mother. DeLee and Greenhill[6] consider continuous vaginal bleeding after rupture of the membranes with weakening and irregularity of the fetal heart rate as diagnostic. There is no doubt that a high index of suspicion on the part of the obstetrician plays a major role in improving the fetal salvage. Antepartum diagnosis is rarely made, especially when there is no associated bleeding. Very few authors were able to make a correct antepartum diagnosis.[2, 7] In one of our cases reviewed (no. 5) the consultant was able to palpate the presence of the vessel in front of the presenting part before a careful amniotomy was done.

There are 2 simple laboratory tests available which help a great deal in establishing the diagnosis. Taking a smear from the vaginal blood and staining it with Wright's stain will help identify it as fetal or maternal in origin. Williamson and Torrey have advised taking a routine smear from any patient with bleeding. The other test is to determine the resistance of the hemoglobin to an alkalinizing agent.[8] Using 0.25 per cent NaOH, it has been known that fetal hemoglobin is found more resistant than maternal hemoglobin. The only difficulty encountered with this test is that it is infrequently used and confusion may result in interpreting the end-color. The prognosis of the infant with vasa praevia is poor. The fetal mortality is still over 50 per cent, especially if associated with hemorrhage. In our series there was only 1 survivor, but, unfortunately, the infant had a congenital defect (tracheo-esophageal fistulae) and died from postoperative complication.

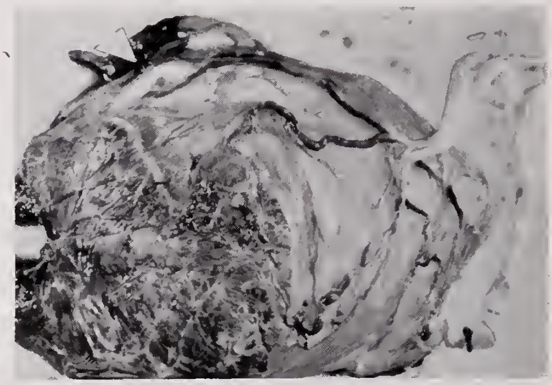

FIG. 1. Velamentous insertion of umbilical cord with rupture of a vessel with secondary hemorrhage. Pointer is at point of disruption of vessel (case 1).

In the management of vasa praevia, teamwork between the obstetrician and pediatrician as well as the support of the blood bank is essential. If available, constant monitoring of high-risk infants to fetal monitor will be very helpful. There seems to be a general trend toward immediate abdominal delivery once the diagnosis is established.[9] However, as Torrey pointed out, it should not be done when the fetal heart is almost fading, especially with a large amount of bleeding when there is a questionable fetal heart beat audible.

(*Continued on page 294*)

Complications of Myocardial Infarction Found at Autopsy*

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AND JUAN B. CALATAYUD, M.D.§

RECENT ADVANCES in diagnostic and surgical techniques have provided a stimulus for the prompt and accurate recognition of the complications of myocardial infarction. The reported incidence of such complications varies in the literature. The purpose of this paper is to report their occurrence in a recent series of 162 consecutive patients who died because of myocardial infarction.

Material and Methods

The George Washington University Hospital autopsy records of 162 consecutive cases of myocardial infarction (July 1963 to June 1967) were reviewed (table 1). Examination of the cardiovascular system was conducted in the usual manner. Heart weight and right and left ventricular wall-thicknesses were recorded in all cases.|| Special attention was given to the age of the infarct (recent or old) based on gross and microscopic criteria, its location, and the presence of complications, i.e., involvement or rupture of the papillary muscles, rupture of the interventricular septum or ventricular wall, aneurysms of the ventricular walls, and mural thrombi. Five main locations for myocardial infarction in the left ventricle (LV) were considered and the topographical classification of Grant[1] used.

TABLE 1: Analysis of 162 Consecutive Cases of Myocardial Infarction

	No.	Per cent
Sex		
Male	105	67
Female	57	33
Age by Decades		
Third	1	0.6
Fourth	14	8
Fifth	38	23
Sixth	48	29
Seventh	44	27
Eighth	15	9
Ninth	2	1.3
Race		
White	137	84
Negro	25	16
Weight of Heart (grams)		
350 or less	27	17
351 to 500	84	52
501 or more	51	31
Ventricular Hypertrophy		
Left ventricular hypertrophy	87	54
Right ventricular hypertrophy	37	23
Biventricular hypertrophy	31	19
Age of Myocardial Infarction		
Recent	53	33
Old	73	45
Recent and old		
(a) Involvement of recent infarction in same area as old	9	
(b) Involvement of recent infarction in same area as old and also adjacent area	16	
(c) Old and recent myocardial infarction involving different areas	10	
Location of Myocardial Infarction		
Anterior, with or without adjacent lateral or septal area	64	39
Posterior, with or without lateral or septal area	37	22
Septal and/or lateral	17	10
Anterior and posterior	12	7
Involvement of multiple areas	35	21
Subendocardial	1	0.6
Right ventricular	3	2
Left atrium	1	0.6

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* Supported in part by Public Health Service Grant HE 5311-05 and by Rehabilitation Research and Training Center (RT-9) of the Social and Rehabilitation Service, United States Department of Health, Education, and Welfare.

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|| Normal: heart weight, 350 Gm. or less; R.V.H.—wall-thickness of 5 mm. or more; L.V.H.—wall-thickness of 15 mm. or more.

Results

The 162 patients had an average age of 65.5 years with a range of 32 to 94. One hundred and five (65 per cent) were males, with an average age of 65.5 years, and 57 (35 per cent) were females, with an average age of 67.4 years. About 80 per cent of the patients were between the ages of 50 and 79 years. One hundred and thirty-seven patients (84 per cent) were Caucasian, and the remaining 21 (16 per cent) were Negroes.

In 84 patients (52 per cent) the heart weighed between 351 and 500 Gm. In 51 (31 per cent) it exceeded 500 Gm., and in the remaining 27 (17 per cent) it was less than 350 Gm. Left ventricular hypertrophy (L.V.H.) was present in 87 cases (54 per cent), right ventricular hypertrophy (R.V.H.) in 37 (23 per cent), and both L.V.H. and R.V.H. were present in 31 cases (19 per cent).

Recent myocardial infarction was found in 33 per cent of the cases; 45 per cent showed evidence of old infarction; and both recent and old myocardial infarctions were found in 35 cases (27 per cent). In 72 per cent of these 35 cases recent infarctions were seen in the same and/or adjacent area of the old myocardial infarction, while in the rest (28 per cent) recent and old infarctions were found to involve different areas of the heart. In most of the cases adjacent septal and lateral areas were involved along with the main location. In 64 patients (39 per cent) the anterior wall of the left ventricle was involved, while 32 cases (22 per cent) had involvement of the posterior wall. In 17 cases (10 per cent) the involvement was localized to the septal and/or lateral wall. Subendocardial infarction was seen in 1 per cent of the cases. Infarction of multiple areas of the myocardium was found in 35 cases (21 per cent). Combined involvement of anterior and posterior walls was observed in 12 cases (7 per cent). The right ventricle (RV) and left atrium (LA), in addition to the infarction in the left ventricle, were involved in 2 and 1 per cent of the cases respectively.

Complications of the myocardial infarction were found in 19 cases (11 per cent of total) (table 2). Infarction of the papillary muscle was the most frequent complication (11 of the 19 cases, or 57 per cent); papillary muscle rupture occurred in only 1 case (5 per cent). The next most frequent complication was an aneurysm of the left ventricle (LV) found in 4 cases (21 per cent). Other complications included 1 case (5 per cent) of rupture of the interventricular septum, 1 case (5 per cent) of rupture of LV, and 1 case (5 per cent) of a mural thrombus of the LV.

The prevalence of papillary-muscle infarction (57 per cent of all complications) warranted a further evaluation of these cases. Of the 11 cases 2 showed involvement of only the papillary muscles, 4 cases involved the anterior wall and/or adjacent areas, and 4 cases the posterior wall and/or adjacent areas. Involvement of both the anterior and posterior walls was found in 1 case.

Discussion

The results of this study with respect to age and sex distribution of the patients agreed with most reported studies.[2] The race distribution is difficult to compare with other studies because hospital populations are so variable.

In about a third of our cases the heart weight was greater than 500 Gm. Using 400 Gm. or more as the criterion, Zaino et al[3] found that 70 per cent of their cases met this criterion. In our series 83 per cent had hypertrophy, 350 Gm. or more being used as the criterion, while 93 per cent of the cases showed hypertrophy of 1 or both ventricles, with thickness of the ventricular walls as the measure.

Pathologic complications of myocardial infarction were encountered in 19 cases (11 per cent). These include 10 cases (5.9 per cent) with gross scarring or fresh infarction of one of the papillary muscles and 1 case (0.6 per cent) with involvement of both papillary muscles. Fresh infarction of 1 or both papillary muscles occurred in 4.3 per cent of the cases. DePasquale and Burch[4] reported necropsy incidence of acute infarction of the papillary muscle in 3.8 per cent of the cases. However, their group included 420 consecutive necropsies, mainly of elderly males.

Papillary-muscle rupture is regarded as a rare complication of myocardial infarction, but in recent years it has been reported more frequently. It is not known whether the condition has become more common or is the result of wider interest in the entity. We have encountered 1 case (0.6 per cent) involving the posteromedial papillary muscle. Cederqvist and Söderström[5] reported the incidence of papillary-muscle rupture in 0.9 per cent of all patients with acute myocardial infarction. The condition was demonstrated in 0.04 per cent of all cases studied postmortem, irrespective of the cause of death. Rupture of a posterior papillary muscle has been found to be 6 to 12 times more frequent than rupture of an anterior papillary muscle, and the lesion is usually associated with posterior myocardial infarction.[6] Papillary-muscle rupture may occur from a few hours[7] to some weeks[6] after the occurrence of the myocardial infarction, and the lesion should be suspected when a patient with acute myocardial infarction suddenly develops a loud apical systolic murmur or an intensification of one already present.

Rupture of a papillary muscle differs from a ruptured septum because there is no thrill and the systolic murmur is best heard at the apex and is accompanied by a diastolic murmur. Without surgical intervention death is usually rapid from acute intractable left-ventricular failure with pulmonary edema. Perforation of the interventricular septum, although still uncommon, is being more frequently diagnosed in life. It has been estimated to occur in 0.9–1.6 per cent of all cardiac infarcts and in 3 per cent of heart ruptures.[8, 9] Perforation of the septum is more frequent in first infarcts and in patients with hypertension[3] and usually occurs from the third to the twelfth day after infarction. We found 1 case in which there was occlusion of the right coronary artery. At necropsy the perforation is often difficult to see, usually being a small ragged rent a few mm. long, and the rupture track is irregular. Occasionally healing allows the formation of a clean hole with white scarred margins. This type may be suitable for surgical closure.

TABLE 2: Complications of 162 Cases of Myocardial Infarction

Complication	Location of Infarction	Age of Infarction	Coronary Artery Involved	No.	Per cent
Anterolateral papillary muscle infarction	(1) Anterior wall and/or adjacent area	Old and recent	RCA,* LDA† and CIR‡	4	2.4
	(2) ” ”	Old	RCA, LDA and CIR		
	(3) ” ”	Old	None, grossly		
	(4) ” ”	Old	RCA, LDA		
Posteromedial papillary muscle infarction	(1) Posterior wall and/or adjacent area	Old and recent	RCA, CIR	4	2.4
	(2) ” ”	Old and recent	RCA, LDA, CIR		
	(3) ” ”	Old	RCA, LDA, CIR		
	(4) ” ”	Recent	None, grossly		
Infarction of both papillary muscles	Anterior and posterior	Recent	LDA	1	0.6
Anterolateral papillary-muscle infarction	(1) No infarct	Recent	RCA, LDA	2	1.1
Posteromedial papillary muscle infarction	(2) No infarct	Recent	RCA, LDA and CIR		
Papillary-muscle rupture	Posterolateral and septal	Old and recent	RCA and CIR	1	0.6
Rupture of interventricular septum	Posterolateral and septal	Recent	RCA occlusion	1	0.6
Aneurysm or left ventricle	(1) Anteroseptal, posterior and lateral	Old and recent	RCA, LDA and CIR	4	2.4
	(2) Posterolateral	Old	RCA, LDA and CIR		
	(3) Septal and posterior	Old and recent	RCA, LDA		
	(4) Lateral wall	Recent	RCA, LDA and CIR		
Rupture of ventricle	Lateral wall	Recent	Occlusion of CIR and severe arteriosclerosis of RCA and LDA	1	0.6
Mural thrombus in LV wall	Anterior and septal walls	Recent	Occlusion of RCA, LDA and CIR	1	0.6
TOTAL				19	11.3

* Right coronary artery.
† Left descending coronary artery.
‡ Circumflex coronary artery.

Ventricular aneurysm associated with acute myocardial infarction has been reported to vary from 5 to 38 per cent, and 85 per cent of all aneurysms of the myocardium are due to infarction. We encountered left ventricular aneurysm in 4 cases. In general, occlusion of the anterior descending artery is associated with apical or anterior-wall aneurysms of the left ventricle, while occlusion of the circumflex and right coronary artery are associated with posterobasal aneurysm. Occlusion of both arteries may lead to aneurysm of the base of the septum and occlusion of the right coronary artery to aneurysm of the outer wall of the right ventricle. The aneurysm usually develops within 3 months of infarction and may be quite large in 2 months.

One case of left-ventricular rupture was encountered in our study. In a review article by Nesvadba[10] that included 5,235 autopsies the incidence of rupture was about 1 per cent. In two-thirds of these rupture occurred on the third or fourth day after the infarction. Rupture was found in the anterior apical area in 64 per cent and in the right ventricle in 7 per cent.

Myocardial infarction may lead to transmural rupture with hemopericardium, tamponade and death. The longest reported survival was 2 days. We have encountered 1 case of left-ventricular rupture. In a study of 3.25 million people in London[11] 600 cases of ruptured ventricle were found, equivalent to about 5,000 per year in Great Britain, or 100 per million of the population. In more than half the cases rupture was through the anterior wall. Apart from the severity and extent of the infarction it is uncertain whether there are any special features about the ventricle which ruptures. Digitalis therapy was not thought an important factor in rupture by Maher.[9] Anticoagulation therapy has also been blamed, but the evidence is not convincing. Hypertension following the infarct would be a factor, just as it is in dissecting aneurysm. When rupture occurs it is usually at the junction of living and dead muscle of the heart wall. The electrocardiogram may show acute changes when hemopericardium occurs, the flat or inverted T waves in the precordial leads becoming tall and often peaked.[12]

We encountered 1 case with intracardiac mural thrombi. The incidence of mural thrombi in the infarcted left ventricle was 33 per cent in a series reported by Jordan et al.[13] They found that mural thrombi were more common in large acute infarcts than in healed infarcts, and with anterior lesions compared with posterior. They were also more frequent in the presence of congestive heart failure and in hypertrophied hearts. Thrombi in the right ventricle were unusual and when present were associated with left-ventricular thrombi. Anticoagulants had not been used in any of the cases reported by them. It is possible that the low incidence of intracardiac mural thrombi encountered by us was due to the fact that anticoagulants were used frequently in our cases.

Summary

The incidence of anatomic complications has been investigated in a group of 162 consecutive autopsy records of patients with myocardial infarction with an average age of 65.5 years. About 80 per cent of the patients were between 50 and 79 years of age. In 83 per cent the heart exceeded the normal weight of 350 Gm. In 96 per cent of the cases left, right, or combined hypertrophy was demonstrated when the left-ventricular wall thickness was used as the criterion. In one-third the infarction was recent, and in the other two-thirds it was old or old and recent. The anterior location was encountered most frequently with or without involvement of adjacent lateral or septal areas (39 per cent) followed by the posterior location (22 per cent).

The complication most frequently encountered was infarction of the papillary muscle (11 cases or 6.7 per cent), followed by aneurysm of the left ventricle (4 cases or 2.4 per cent). The other complications included papillary muscle rupture (1 case), rupture of the interventricular septum (1 case), rupture of the left ventricle (1 case), and mural thrombus in the left-ventricular wall (1 case).

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Treatment of Acute Massive Gastrointestinal Hemorrhage in an Experimental Study on Dogs*†

S. LEKAGUL, M.D.‡

ACUTE massive gastrointestinal hemorrhage remains an enigma. Many modes of diagnosis and treatment have been evaluated and great improvements made. However, mortality remains significant, especially in cases of undetermined sources of bleeding.

In searching for a new method to improve treatment I have been interested in peritoneal cooling and the possibility of controlling gastrointestinal hemorrhage by circulating cold liquid through the peritoneal cavity by means of a modification of peritoneal dialysis technique.

Preliminary work with peritoneal cooling and the acute massive gastrointestinal hemorrhage in laboratory animals is valuable preparation for safe and effective clinical application.

The essential part of this experiment is the production of a bleeding preparation that would be reproducible, remain stable for several hours, and resemble closely the clinical situation under study. A search of the literature revealed no preparation that met these requirements. After process of trial and error a technique was involved which allowed the production of a stable upper gastrointestinal hemorrhage in the dog which closely simulates the clinical picture of prolonged massive bleeding from a peptic ulcer.

Method

Mongrel dogs of both sexes weighing 16–25 Kg. were fasted for 24 hours. They were anesthetized with sodium secobarbital§, 40 mg. per Kg. of body weight, intravenously to produce a prolonged and stable anesthetic state. A cuffed endotracheal tube was introduced and connected to a self-demanded respirator with the use of 100 per cent therapeutic oxygen.

An arterial catheter was placed in the upper part of a femoral artery. Its tip reached the aorta and connected to a 3-way stopcock for obtaining blood samples for determination of hemoglobin and hematocrit and to a strain-gauge manometer for monitoring of mean arterial pressure. A catheter was introduced into the right external jugular vein and passed into the right atrium, then connected to the saline manometer for intermittent monitoring of the central venous pressure. Blood and fluids were given through an intravenous catheter placed in a leg vein. Rectal and esophageal telethermometer probes were inserted and connected to an electric thermometer|| reading for intermittent recording of the body temperature.

A midline abdominal incision was made starting from the xiphoid process downward. Splenectomy and omentectomy were carried out to prevent interference in hemodynamics due to a large pooling of blood in the spleen.[1]

The most constant large gastric arteries, both in size and anatomic course, were found to be the branches of the left gastric artery on the anterior wall of the stomach. They are usually 3 to 4 branches in number, each with 2 accompanying veins. They run from their origins high in the lesser sac near the cardiac end of the stomach and downward over the anterior surface to about the midportion of the stomach body, where they penetrate the muscular wall (figure 1).

One of the middle arteries was selected as the target artery. The next step was one of the most important parts of this technique. The step involved creating a landmark by a marking stitch

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* The author received Second Prize for this paper in the 1969 Dr. Philip Burka Awards and Citations at the Annual Membership Luncheon of the Medical Society of the District of Columbia, September 24, 1969.

† This study was supported in part by the Research Foundation of the Washington Hospital Center, Washington, D. C.

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§ Seconal Sodium, a product of Eli Lilly and Company, Indianapolis, Ind.

|| Yellow Springs Instrument Co., Inc., Yellow Springs, Ohio.

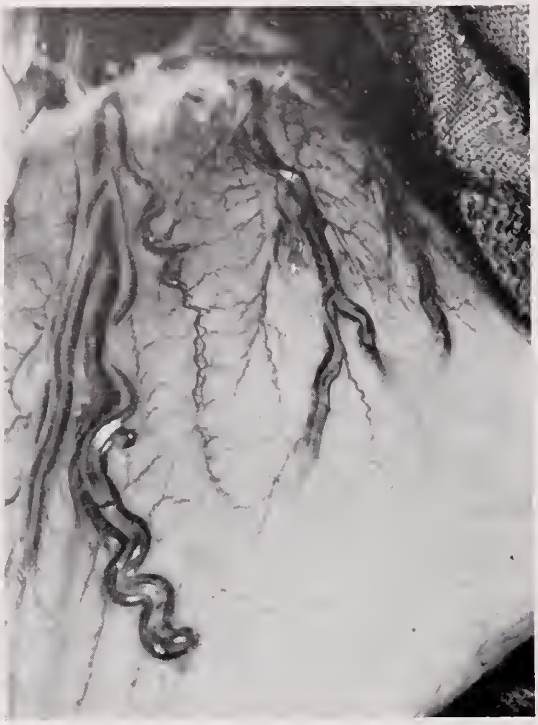

FIG. 1. Anterior wall of dog stomach showing pattern of branches of left gastric artery, each branch flanked by 2 accompanying veins.

of 3-0 silk on a 1-inch curved, thin nontraumatic needle passed into the stomach a half inch to one side of the arterial entry point and brought out a half inch to the other side (figure 2). A curved polyethylene catheter was passed through and tied (figure 3). A purse-string suture of 3-0 silk, encircling an area of the stomach wall about 3–4 cm. in diameter, was then placed 3–4 cm. below the marker stitch (figure 2).

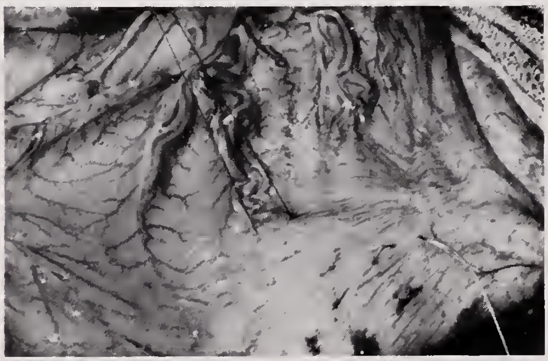

FIG. 2. Marker stitch shown in center at point where gastric vessels penetrate muscular layer of anterior stomach wall. Purse-string suture also shown in place at lower right.

The stomach was then opened and all bleeders were tied. All gastric contents were aspirated. The marker stitch was then pulled out of the incision (figure 3) and the gastric mucosa everted gently with the index and middle fingers of the left hand (figure 4). This curved polyethylene tube allowed the target artery to be pulled up into the wound without being compressed.

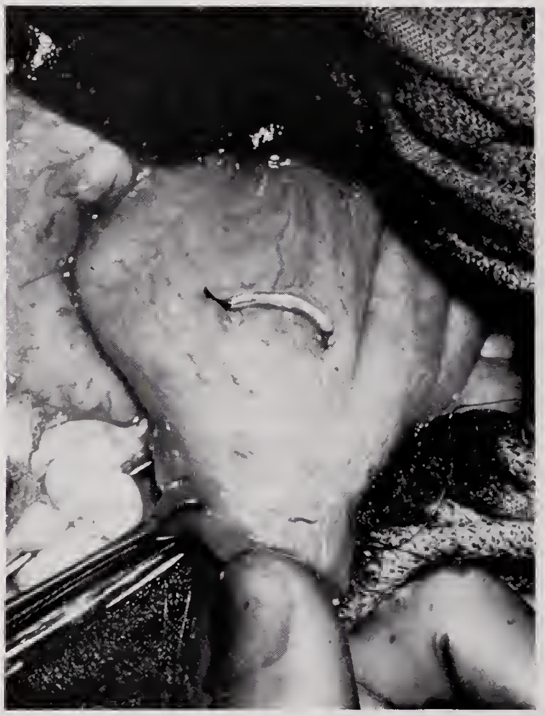

FIG. 3. Polyethylene tube shown in center, forming a "bridge" over target artery. Marker stitch is pulled out through gastrostomy incision, shown below. Note that contracted artery almost disappeared into the stomach wall. Compare with figures 1 and 2.

A 1-inch button of mucosa, submucosa, and part of the muscular layers were then removed between the marker stitches with a Metzenbaum

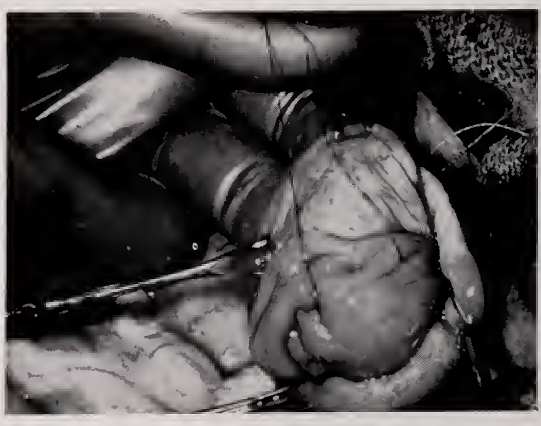

FIG. 4. Gastric mucosa everted to show target area.

scissors (figure 5). The next step of dissection was very important and delicate because it was necessary to dissect the muscular wall layer by layer without perforating the stomach. A Westcott blunt-tipped microtenotomy scissors was found useful for this.

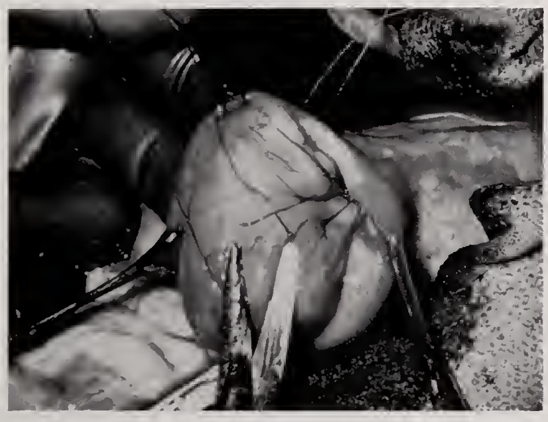

FIG. 5. A button of gastric mucosa about to be excised to expose target artery underneath 2 marker stitches.

The artery was found in the muscular layer, about 1 mm. in diameter. It was then dissected free from the surrounding tissue for a distance of 1–1.5 cm. (figure 6) to prevent a strong contraction of the stomach which would have sealed off this ulcer in response to the injury.

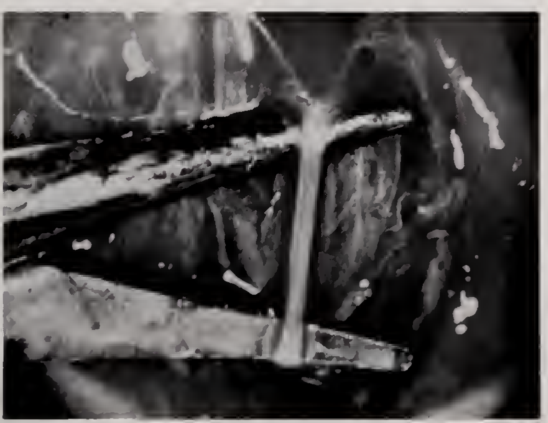

FIG. 6. Target artery (about 1 mm. in diameter) exposed.

About a 0.5 cm. longitudinal arteriotomy was then made and an elliptical segment of the arterial wall excised (figure 7). The bleeding was not stable when the artery was completely cut transversely. In both situations the artery was allowed to bleed freely. A flanged plastic tube, 2 cm. in diameter, was then inserted into the stomach and a purse-string suture tied snugly around it (figure 8). To retain all blood in the stomach a silk tie was placed around the first portion of the duodenum with care not to include the gastroduodenal or superior pancreaticoduodenal arteries. No suture was necessary proximally since reflux did not occur. A third telethermometer probe was placed in the peritoneal cavity and brought out through the incision. In working with the animals that received peritoneal cooling, 2 fenestrated dialysis catheters were also introduced. The abdominal wall incision was then closed around the stomach tube. A suction catheter was inserted into this plastic tube for removal of the blood into a graduated container. The completed preparation is illustrated in figure 9.

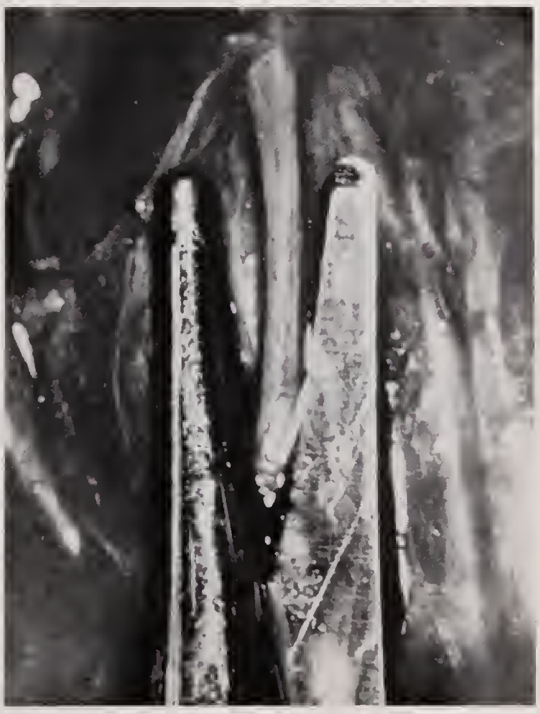

FIG. 7. Longitudinal excision of arterial wall of target artery.

The animals were observed for 4 hours after bleeding started. Blood loss was measured and continuously replaced by equal volume of fresh whole blood drawn immediately preoperatively in standard A.C.D. solution* bottles. Hematocrit, mean arterial pressure, central venous pressure, pulse rate, and temperature were recorded every half hour.

The animals were divided into 3 groups, 5 dogs in each group:

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* Saftivac, a product of Cutter Laboratories, Berkeley, Calif.

Group A. Pilot group. No blood replacement, only saline solution I.V.

Group B. With blood replacement, without peritoneal cooling.

Group C. With blood replacement, with peritoneal cooling.

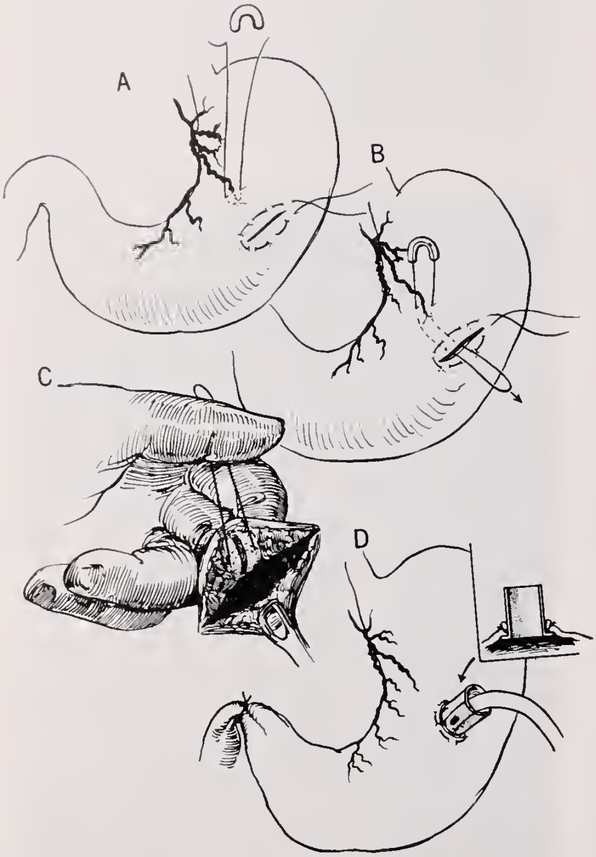

FIG. 8. Operative sequence showing: A. Placement of marker stitch and a purse string. B. Gastrostomy with marker stitch pulled out. C. Eversion of mucosa, exposure of target artery, and an arteriotomy. D. Placement of flanged tube in gastrotomy incision, and ligation of first portion of duodenum.

In group C peritoneal cooling was started after bleeding was well established for 1 hour. Then the peritoneal cavity was filled with normal saline solution, 1,000–1,500 ml., at 20°C initially through the inlet catheter. After the fluid was filled the closed circuited peritoneal circulation started and the inflow temperature controlled by a heat exchanger to keep the peritoneal cavity temperature at 28°–30°C.

Results

All the animals in pilot group A bled profusely at the rates of 350 to 650 ml. per hour in the first-hour period and 300 to 570 ml. per hour in the second-hour period (table 1). The cessation of bleeding occurred in the third-hour period, and there was no bleeding at the end of the third hour.

TABLE 1: Group A—Pilot Group. No Blood Replacement, Only Saline Solution I.V.

Time in Hours	Dogs					Average Values
	1	2	3	4	5	
	Blood Loss in Milliliters					
½	200	250	150	200	350	230
1	200	250	250	150	300	230
1½	200	200	200	150	300	210
2	200	200	200	150	270	204
2½	100		100	100	250	110
3			20	50	200	54
3½						0
4						0
Total	900	900	920	800	1,670	1,038

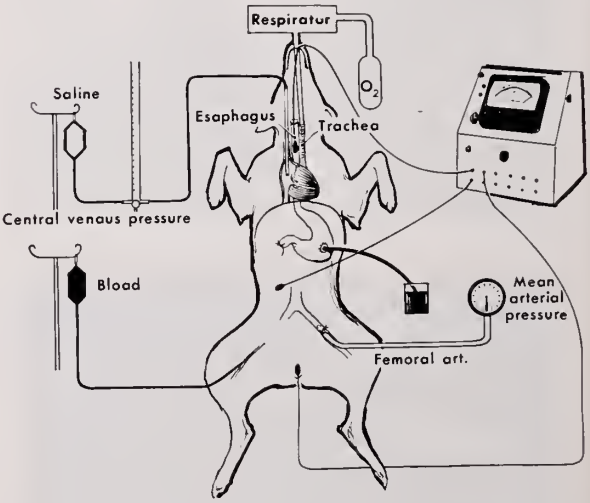

FIG. 9. Complete preparation showing arterial and venous pressure and temperature monitoring systems, and collecting system for measurement of gastric bleeding.

It was noted that we were unable to maintain the arterial pressure, which declined to 60–95 mm. Hg in the second hour. The preliminary studies showed that replacement was essential; otherwise bleeding ceased in 2 to 3 hours, when the mean arterial pressure fell to one-third initial values.

All the animals in group B bled freely and continuously, at rates of 500 to 1,700 ml. per hour. The total blood loss in the 4 hours of observation period ranged from 2,430 to 5,000 ml. (table 2).

The blood loss was so massive that replacement fell behind in one animal, and this was reflected in a drop in the hematocrit. The other 4 animals maintained normal hematocrits throughout the observation period.

TABLE 2: Group B with Blood Replacement

Time in Hours	Dogs					Average Values
	1	2	3	4	5	
	Blood Loss in Cubic Centimeters					
½	300	350	400	450	600	420
1	270	300	450	400	500	384
1½	250	800	500	350	500	480
2	250	650	500	400	500	460
2½	350	700	650	350	800	570
3	360	800	800	300	900	632
3½	350	700	750	350	600	550
4	300	650	650	350	600	510
Total	2,430	4,950	4,700	2,950	5,000	4,006

Arterial mean pressure ranged from 120 to 150 mm. Hg preoperatively. Following completion of the surgery (splenectomy and omentectomy) the pressure ranged from 130 to 190 mm. Hg before the bleeding started. During the next 4 hours a decline occurred in all animals, ranging from 10 to 50 per cent of this value at the end of the fourth hour. The central venous pressure remained stable within normal range during this period. The rectal temperature ranged within 2°C (+1°C or −1°C) of the initial temperature.

In group C (with blood replacement and peritoneal cooling) all the animals bled freely and continuously at rates ranging from 750–2,000 ml. per hour in the first-hour period before cooling started. A marked decrease in bleeding was clearly demonstrated, ranging from 20–70 per cent in the first hour of cooling period and 30–90 per cent in the second hour. Bleeding was controlled in the third hour in 2 of 5 animals. In the remaining animals it was stopped during the fourth hour of cooling (table 3). In this group, 1 hour after cessation of bleeding in all animals except 1, both hematocrit and mean arterial pressure returned to the normal level of the preoperative period. During the cooling period the mean arterial pressures seemed to be stable on a higher level than in the noncooling animals.

Discussion

The gastrointestinal hemorrhage preparation has been attempted before, as reported by Wangensteen et al.[2] They demonstrated that gastric cooling reduced blood flow to the stomach by direct measuring of the venous return through the splenic vein with no attempt to create massive bleeding from the ulcer. Jaffe[3] reported his early attempts to create massive bleeding to localize gastrointestinal hemorrhage in dogs by aortography. Curettement of the mucosa of the bowel failed to produce massive or sustained bleeding. Only brief oozing hemorrhage could be detected. This was true in our many early pilot studies. Injury to the mucosa or muscular wall to create a deep ulcer also failed to produce prolonged stable hemorrhage. Later on Jaffe used isolated splanchnic vessels inserted into the small intestine directly to produce massive hemorrhage.

TABLE 3: Group C with Transfusion of Blood and Peritoneal Cooling

Bleeding Hours	Cooling: Hours	Dogs					Average Values
		1	2	3	4	5	
		Blood Loss in Milliliters					
½		1,000	700	500	350	550	620
1		1,000	700	450	400	650	640
1½	½	500	600	400	250	550	460
2	1	200	500	350	200	400	330
2½	1½	100	250	350	200	350	250
3	2	100	50	300	100	300	170
3½	2½	80	0	300	0	300	136
4	3	50	0	250	0	200	100
4½	3½	0	0	100	0	100	40
5	4	0	0	0	0	0	0
Total		3,030	2,800	3,000	1,500	3,400	2,746

The method as described in this paper proved to be a stable and reliable way to produce massive gastrointestinal hemorrhage with consistently reproducible results. With continued blood replacement the preparation should be stable for the period of observation. This technique may be applied to any region of the gastrointestinal tract.

Summary

A new technique to produce a stable reproducible massive gastrointestinal hemorrhage in laboratory animals which resembles closely the clinical situation has been presented. The value of peritoneal cooling in the treatment of massive gastrointestinal hemorrhage has been demonstrated.

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Maternal and Congenital Rubella—Muir

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Treatment of Pharyngeal Pouches and Webs—Trible

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A Permanent Transvenous Atrial Electrode Catheter*†

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In patients with complete heart-block synchronous pacing offers a number of significant advantages over fixed rate (asynchronous) and demand pacing.[1-4] These have been well documented and include response to increased physiologic demand by increase in rate as well as stroke volume, prevention of parasystole, and preservation of the hemodynamic advantage of the "atrial kick."[5-12] With the development of transvenous fixed-rate and demand pacing numerous attempts have been made to establish synchronous pacing without thoracotomy. These have included the use of straight[13-16] and curved transvenous atrial electrodes,[13, 15, 17] an extrapericardial atrial lead placed above the left atrium by a superior mediastinal approach,[18] and intrapericardial lead systems inserted by a subxiphoid approach.[19, 20] All of these methods have had a considerable measure of success but have not given consistently satisfactory P-wave pick-up.

In patients with symptomatic bradycardia, without heart-block, ventricular demand pacing is currently the accepted treatment. A more logical mode of treatment for many of these patients would be demand or fixed-rate atrial pacing with preservation of the atrial transport mechanism. The lack of a suitable transvenous electrode for permanent atrial pacing has slowed the development of this approach.[21]

This study is concerned with the development of a permanent atrial electrode catheter designed to lodge in the portion of the right atrium containing the most prominent muscular trabeculae, namely, the appendage. We thought that this cul de sac would stabilize the electrode position and that fixation of the electrode in the pectinate muscles of the appendage should be possible, analogous to fixation of an endocardial electrode in the trabecular muscles of the ventricle.

Materials and Methods

The experimental unipolar electrode catheter was constructed of helicol coil Elgiloy wire lying free in a silastic tube 3 mm. in diameter and 56 cm. long, connected to a terminal Elgiloy electrode of 2 mm. length and 0.119 cm.^{2} surface area.§ One or more flanges were moulded in the silastic sheath at the base of the electrode to aid in fixation. A central stylet was used to stiffen the catheter during insertion. When the stylet was withdrawn the catheter assumed a preformed curve (figure 1). Catheters of 3 different configurations were studied in 15 dogs (figure 2). The

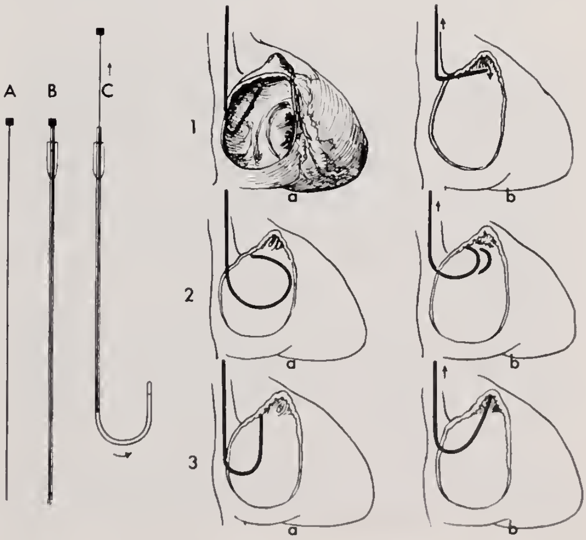

FIG. 1. The catheter with its central stylet and pre-formed curve is shown in A, B, and C. The various types of curved catheters are shown in 1, 2, and 3; "a" shows catheter entering appendage, and "b" shows attempt to advance it into tip of appendage, successful only in the third type.

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* The author received Honorable Mention for this paper in the 1969 Dr. Philip Burka Awards and Citations at the Annual Membership Luncheon of the Medical Society of the District of Columbia, September 21, 1969.

† This study was performed in the Surgical Research Laboratory of the Washington Hospital Center under the guidance of Dr. Nicholas P. D. Smyth and in cooperation with Dr. Laszlo Vasarhelyi.

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§ Produced by Cordis Corporation, Miami, Fla.

catheter was inserted into the right external jugular vein and positioned in the right atrial appendage under fluoroscopic control with image intensification.

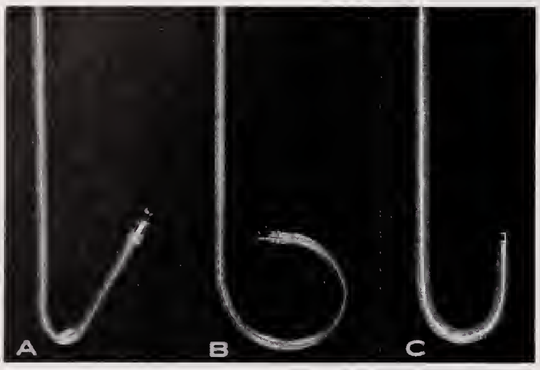

FIG. 2. A, B and C: first, second and third catheter designs. C is similar to A, but the larger radius of the curve allows catheter to be advanced into tip of appendage. B could not be advanced into tip of appendage. Each catheter shows slight variation in design of silastic retaining shoulder at base of electrode.

In 5 animals atrial P-wave potentials and atrial-stimulating thresholds recorded acutely and at sacrifice 1 month later. In 5 animals ventricular stimulating thresholds were first recorded. The catheter was then positioned in the appendage and atrial P-wave potentials and stimulating thresholds recorded. Chronic atrial potentials and stimulating thresholds were studied at sacrifice 1 to 5 months later.

Atrial and ventricular stimulating thresholds were measured in volts and milliamperes at pulse durations of 0.5, 1.0, 1.5, 2.0 and 2.5 milliseconds.

In all animals electrode position was checked by posteroanterior and lateral roentgenograms at operation and at monthly intervals thereafter (figure 3). In the 10 animals the position and degree of fixation of the electrode were studied at autopsy, and histologic examination of tissue in contact with the electrode was carried out.

Results

The first design (figure 2-A) was soon abandoned because the narrow angle of the curve tended to force the tip of the catheter laterally as it was advanced into the appendage (figure 1, 1-a and 1-b) thus preventing stable location in the tip of the appendage.

The second design (figure 2-B) was also abandoned because the 3-quarter curve, designed to enhance endocardial contact, did not allow the tip of the catheter to be advanced into the tip of the appendage for a stable location (figure 1, 2-a and 2-b).

The third design (figure 2-C) was standardized early in the study because it could be readily advanced into the tip of the appendage and held there (figure 1, 3-a and 3-b).

Atrial P-wave potentials ranged from 2 to 13 millivolts initially, generally declining to 2 to 10 millivolts 1 to 5 months later. Increased chronic values were recorded in 2 animals (figure 4).

Atrial-stimulating thresholds were consistently 2 to 10 times higher than ventricular thresholds in the same animal at the time of initial study. A comparative study of chronic values is in progress. Atrial and ventricular strength duration curves in the same animal, demonstrating the magnitude of this disparity, are shown in figure 5, A and B.

A comparison of acute and chronic atrial-stimulating thresholds showed a rise from an initial range of 0.5 to 2.5 to 1.5 to 4.0 milliamperes 1 to 5 months postoperatively (figure 6).

Stable location of the catheter in the right atrial appendage was confirmed in all 10 animals studied at autopsy. Although mechanical fixation of the

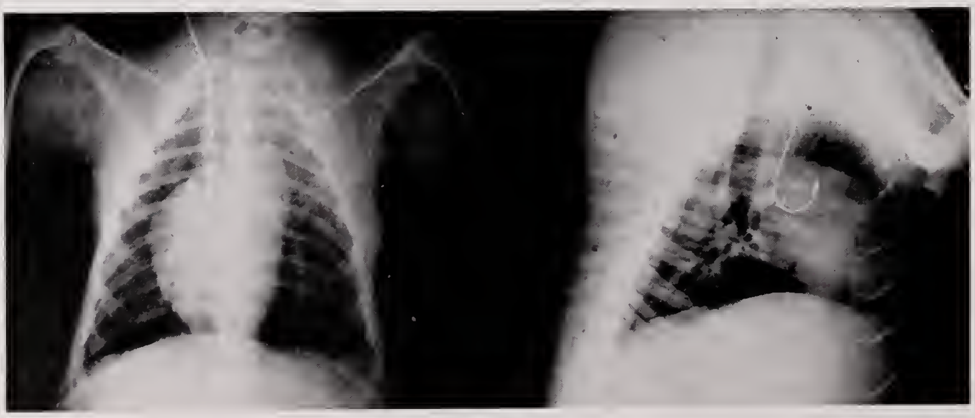

FIG. 3. J-shaped atrial electrode in position in right atrial appendage of dog's heart.

catheter by pectinate muscle bands was seen in several cases (figure 7-A), in no cases was there any evidence of fixation of the electrode by the growth of new tissue (figure 7-B), and the catheter could be readily withdrawn from the atrial appendage in every case.

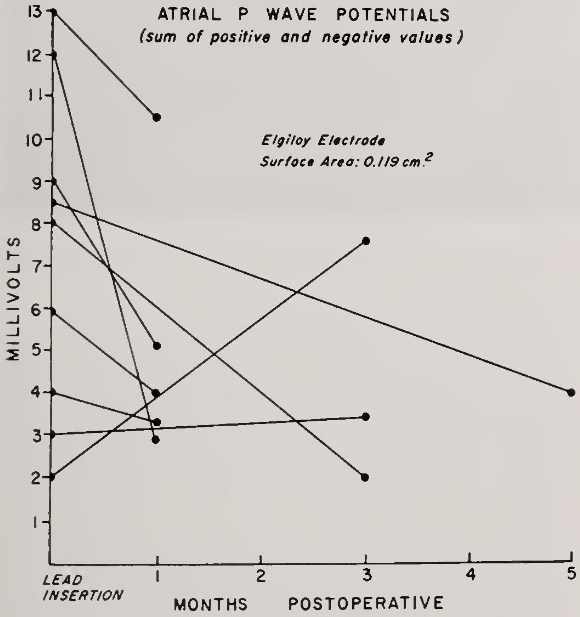

FIG. 4. Atrial unipolar potentials recorded as sum of positive and negative deflections of biphasic P wave. Electrode material and surface area are also shown.

Histologic studies showed essentially normal atrial tissue at the site of contact with the electrode, with subendocardial round-cell infiltration in 4 cases. In the case in which the electrode had been in place 5 months a small area of subendocardial cartilage formation was seen (figure 8).

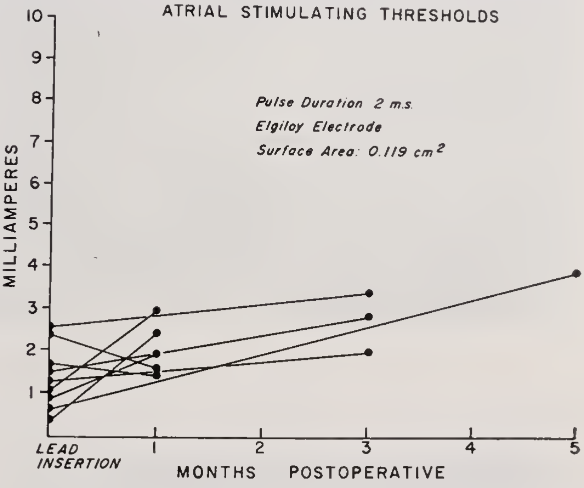

FIG. 6. Acute and chronic atrial-stimulating thresholds showing a small rise in most cases but a drop in 2 cases at 1 month postoperatively.

Discussion

Experimental studies have shown that the J-shaped catheter can be readily positioned with fluoroscopy in the right atrial appendage and that the position is stable, providing satisfactory detection of the P-wave potentials.

Atrial capture is also readily achieved but at significantly higher thresholds than ventricular capture in the same animal with the identical electrode. This finding was unexpected. The higher atrial thresholds may be due to less inti-

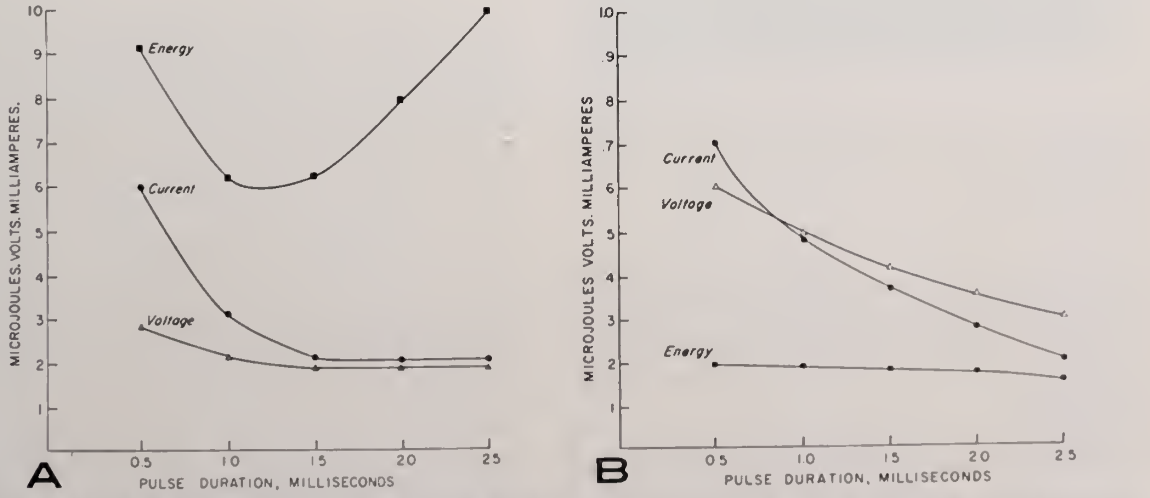

FIG. 5. A and B. Acute energy, current and voltage strength duration curves shown for the atrium in A and the ventricle in B in same animal. Note significantly higher values in atrium. Unipolar stimulation with an Elgiloy electrode of 0.119 cm.^{2} Surface area was carried out in each case.

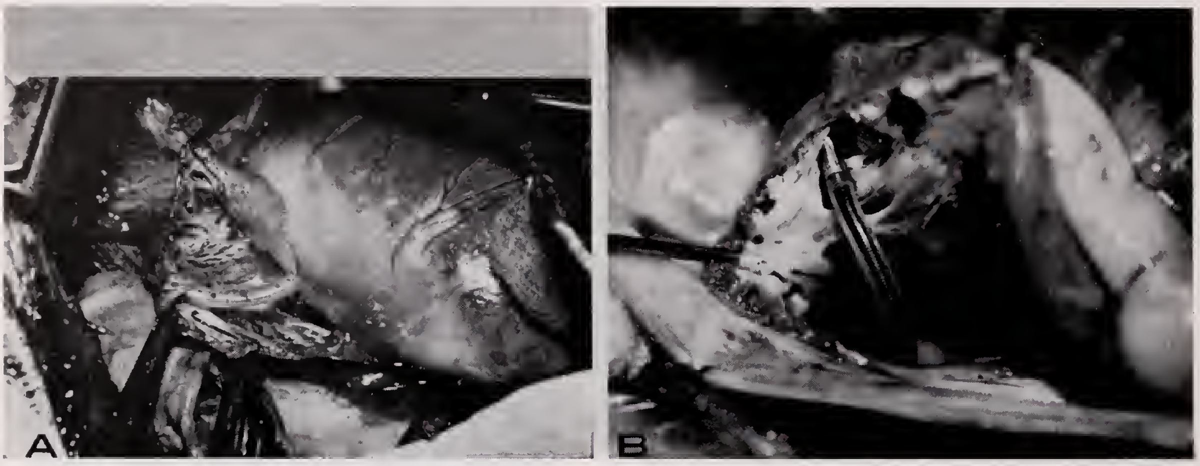

FIG. 7. A. Mechanical fixation of atrial electrode at 3 months by a band of pectinate muscle. B. Stable location of electrode in tip of appendage at 5 months. No tissue fixation in either case.

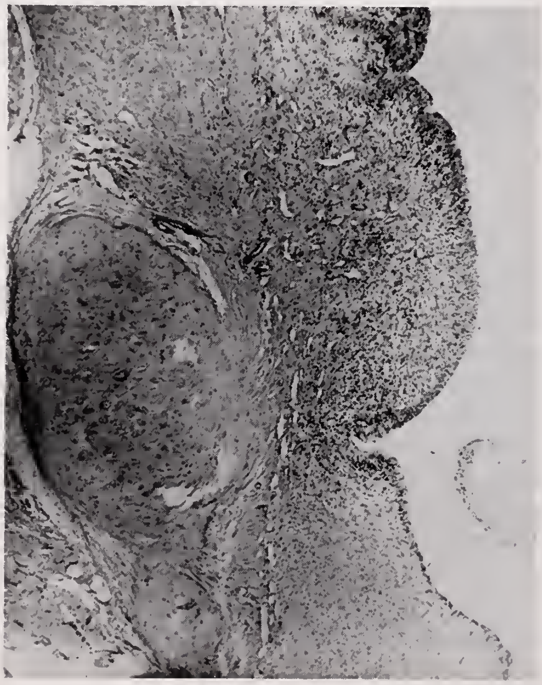

FIG. 8. Subendocardial round-cell infiltration and a small area of cartilage formation are shown. Tissue taken from atrial electrode site 5 months postoperatively.

mate contact between electrode and endocardium, or may be part of a normal in vivo mechanism to enhance antegrade conduction from atrium to ventricle and to minimize abnormal retrograde conduction.

Experimental study showed that, although the appendage provides a stable location for the electrode catheter, fixation to the wall of the atrium does not occur. This is an unexpected finding. We had anticipated that the presence of a foreign body in this cul de sac would readily lead to localized clot formation and early fixation. The absence of any sign of fixation may be due in small part to the inert nature of Elgiloy and silastic but is probably due in major part to the muscular activity of the appendage, resulting in extensive motion of the electrode in the atrial appendage as compared with the minimal motion of the electrode lying at the apex of the right ventricle. This lack of fixation may help to explain why the chronic atrial thresholds showed only a small rise compared to that usually seen in the ventricle, where the fibrosis associated with fixation is a factor.[22] Methods of achieving better fixation of the atrial electrode are under study, although it may be that stability without fixation is more desirable.

Summary

A permanent transvenous atrial electrode is needed both for synchronous ventricular pacing and for atrial pacing. Studies were performed on 10 experimental animals with a unipolar transvenous electrode catheter of Elgiloy wire lying free in a silastic tube which assumed a J-shape when positioned in the right atrial appendage. Satisfactory detection of the P-wave potentials was provided by the electrode catheter. Atrial-stimulating thresholds were seen to be 2 to 10 times higher than ventricular-stimulating thresholds in the same animal. The atrial appendage provided a stable location for the catheter electrode, but fixation of the electrode in the pectinate muscle of the appendage did not occur.

(Continued on page 294)

Hypotension and the Shock Syndrome in Myocardial Infarction*

RICHARD S. ROSS, M.D., F.A.C.P.†

HYPOTENSION is a common and often benign consequence of myocardial infarction, but the "shock syndrome" is a less common but often fatal complication. Precise definition and clear understanding of the hemodynamic consequences of myocardial infarction are, therefore, necessary for management.

Blood pressure alone is not a good index of the patient's clinical status. Blood pressure (BP) is a function of both cardiac output (CO) and total peripheral resistance (TPR) as indicated by the simple relationship: BP = CO × TPR.

Thus, BP will be reduced if either CO or TPR is reduced.

Shillingford and colleagues have shown that there are 2 physiologic patterns associated with arterial hypotension depending upon the state of peripheral resistance. In one group of patients the hypotension is clearly related to a reduced cardiac output with the peripheral resistance normal or increased. In the second group TPR is reduced but the cardiac output is normal. These 2 groups can sometimes be distinguished clinically. The first group with increased resistance have cool extremities and a small pulse volume, while the second group are characterized by warm extremities and a full pulse.

Hypotension exists in at least 80 per cent of patients following myocardial infarction, and in most patients the blood pressure returns to normal levels with the relief of pain and the administration of oxygen. The hypotension occasionally persists for weeks or months but is often unassociated with significant symptoms.

The Shock Syndrome

The shock syndrome occurs in about 20 per cent of patients with myocardial infarction and accounts for at least 50 per cent of the deaths now that the mortality from arrhythmias has been reduced. The mortality rate in patients with the shock syndrome secondary to myocardial infarction ranges from 85 to 95 per cent if the syndrome is rigidly defined and clearly distinguished from simple hypotension as described above.

The following criteria for the shock syndrome define a population of patients with a mortality of greater than 95 per cent: (1) systolic arterial blood pressure of less than 80 mm. Hg, (2) clinical signs of peripheral circulatory insufficiency—cold, moist skin and cyanosis, (3) dulled sensorium, (4) oliguria with urine flow of less than 30 ml./hr., and (5) failure of improvement following relief of pain and the administration of oxygen.

The insult to the heart is the cause of the shock syndrome in myocardial infarction, although all organ systems are ultimately involved. The function of the heart is impaired by the initial insult, and this results in a decrease in arterial pressure and, hence, coronary blood flow because of its dependence upon aortic perfusion pressure. The reduction in coronary perfusion pressure and myocardial blood flow further impair myocardial function and may increase the size of the myocardial infarction. Arrhythmias and metabolic acidosis also participate in this deterioration in that they are the result of inadequate perfusion, and both tend to perpetuate the precipitating conditions. It is this negative feedback relationship (impaired cardiac function—arterial hypotension—reduced coronary blood flow—impaired cardiac function) which accounts for the high mortality associated with the shock syndrome.

Cardiac output is lower in patients with shock than in those who do not have the shock syndrome, but this is by no means the whole explanation. There are many patients with myocardial infarction without shock who have cardiac outputs in the same range or lower than those measured in patients with shock and, therefore, it is not possible to characterize these patients on the basis of changes of cardiac output alone.

Total peripheral resistance, the other factor important in determining blood pressure, may be normal, increased, or decreased in myocardial infarction. Here, again, a similar range of values for total peripheral resistance can be seen in patients in the absence of shock. Normally, a fall in cardiac output is accompanied by a compensatory rise in total peripheral resistance, but in patients with shock due to myocardial infarction the appropriate response in peripheral resistance fails to occur. Thus, it appears that the total peripheral resistance is inadequate to support blood pressure at the existing level of cardiac output regardless of the extent of reduction of the latter.

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* Submitted to the MEDICAL ANNALS by the Washington Heart Association.

† Professor of Medicine and Director of the Cardiovascular Division, Department of Medicine, The Johns Hopkins University School of Medicine, Baltimore, Md. 21205.

Treatment

The objective of treatment is the interruption of the negative feedback loop whereby impaired myocardial function leads to a reduction in arterial pressure, decreased coronary blood flow, and a further depression of left-ventricular function. This objective is approached by attempting to improve cardiac function and to raise the arterial blood pressure.

Vasopressors constitute an important form of therapy for shock of myocardial infarction. A small increase in arterial pressure may result in a sizable increase in coronary blood flow. The best vasopressors for use in myocardial infarction are norepinephrine (Levophed®) and metaraminol (Aramine®) which act both on the alpha receptors in the arterial wall and also on the beta receptors in the myocardium. Thus, the practical experience with the treatment of shock in myocardial infarction is consistent with the theory of pathogenesis which emphasizes the dual nature of the pathophysiology in that drugs which act on both the heart and the peripheral circulation are the most effective.

Consideration of the central role of impaired myocardial function in the shock syndrome leads to the conclusion that cardiac glycosides should be administered to all patients with this condition. Obviously, the cardiac glycosides cannot improve the function of necrotic myocardium, but a positive inotropic influence of the noninfarcted myocardium is desirable. It has been demonstrated that the incidence of arrhythmia and cardiac rupture is no higher in patients with myocardial infarction treated with digitalis than in a control group.

Certain general measures have proven useful in the treatment of the shock syndrome. All patients with the shock syndrome should receive 100 per cent oxygen continuously because the addition of dissolved oxygen to the plasma helps to combat the hypoxemia which is universally present. The relief of pain is important because some vasodepressor reflex activity may be a response to severe pain, but narcotics should be used cautiously in view of their hemodynamic effects. Fluid volume replacement has a limited but definite place in the therapy of the shock syndrome. It may be indicated in patients who have been receiving pressor drugs for a prolonged period because pressor therapy results in a decrease in plasma volume secondary to the movement of fluid into extravascular space. In such patients, if central venous pressure is low and there is no evidence of pulmonary congestion, the blood pressure may be easier to maintain after plasma volume has been expanded by the administration of plasma or salt-poor albumin. Venous pressure should be monitored and the lungs examined frequently during the administration of plasma. Also, fluid replacement is necessary in patients who have lost extracellular fluid volume consequent to vomiting or sweating.

The high mortality and relative ineffectiveness of conventional therapy have provided the stimulus for the investigation of other approaches to the problem. The basic defect in the shock syndrome is impaired myocardial function and, therefore, many mechanical assist-devices are currently under investigation. The therapeutic value of of hyperbaric oxygen therapy is also under study. Studies with experimental animals are encouraging, but clinical trials have been disappointing. A large fraction of patients with the shock syndrome have severe, diffuse coronary atherosclerosis with large areas of infarcted myocardium. It is in this group of patients that total replacement of the heart by a homotransplant or an artificial device will have its greatest potential usefulness. Circulatory assist-devices may have their greatest use in sustaining life until this is possible.

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An increased risk of thromboembolic disease associated with the use of hormonal contraceptives has now been shown in studies conducted in both Great Britain and the United States. Other risks, such as those of elevated blood pressure, liver disease and reduced tolerance to carbohydrates, have not been quantitated with precision.

Long-term administration of both natural and synthetic estrogens in subprimate animal species in multiples of the human dose increases the frequency of some animal carcinomas. These data cannot be transposed directly to man. The possible carcinogenicity due to the estrogens can be neither affirmed nor refuted at this time. Close clinical surveillance of all women taking oral contraceptives must be continued.

Indication—Ovulen is indicated for oral contraception.

Contraindications—Patients with thrombophlebitis, thromboembolic disorders, cerebral apoplexy or a past history of these conditions, markedly impaired liver function, known or suspected carcinoma of the breast, known or suspected estrogen-dependent neoplasia and undiagnosed abnormal genital bleeding.

Warnings—The physician should be alert to the earliest manifestations of thrombotic disorders (thrombophlebitis, cerebrovascular disorders, pulmonary embolism and retinal thrombosis). Should any of these occur or be suspected the drug should be discontinued immediately.

Retrospective studies of morbidity and mortality in Great Britain and studies of morbidity in the United States have shown a statistically significant association between thrombophlebitis and pulmonary embolism and the use of oral contraceptives. There have been three principal studies in Britain[1-3] leading to this conclusion, and one[4] in this country. The estimate of the relative risk of thromboembolism in the study by Vessey and Doll[3] was about sevenfold, while Sartwell and associates[4] in the United States found a relative risk of 4.4, meaning that the users are several times as likely to undergo thromboembolic disease without evident cause as nonusers. The American study also indicated that the risk did not persist after discontinuation of administration, and that it was not enhanced by long-continued administration. The American study was not designed to evaluate a difference between products. However, the study suggested that there might be an increased risk of thromboembolic disease in users of sequential products. This risk cannot be quantitated, and further studies to confirm this finding are desirable. Retrospective studies in Great Britain and the United States have shown a statistically significant association between cerebral thrombosis and embolism and the use of oral contraceptives.

Discontinue medication pending examination if there is sudden partial or complete loss of vision, or if there is a sudden onset of proptosis, diplopia or migraine. If examination reveals papilledema or retinal vascular lesions medication should be withdrawn.

Since the safety of Ovulen in pregnancy has not been demonstrated, it is recommended that for any patient who has missed two consecutive periods pregnancy should be ruled out before continuing the contraceptive regimen. If the patient has not adhered to the prescribed schedule the possibility of pregnancy should be considered at the time of the first missed period.

A small fraction of the hormonal agents in oral contraceptives has been identified in the milk of mothers receiving these drugs. The long-range effect to the nursing infant cannot be determined at this time.

Precautions—The pretreatment and periodic physical examinations should include special reference to the breasts and pelvic organs, including a Papanicolaou smear since estrogens have been known to produce tumors, some of them malignant, in five species of subprimate animals. Endocrine and possibly liver function tests may be affected by treatment with Ovulen. Therefore, if such tests are abnormal in a patient taking Ovulen, it is recommended that they be repeated after the drug has been withdrawn for two months. Under the influence of progestogen-estrogen preparations preexisting uterine fibromyomas may increase in size. Because these agents may cause some degree of fluid retention, conditions which might be influenced by this factor, such as epilepsy, migraine, asthma, cardiac or renal dysfunction, require careful observation. In breakthrough bleeding, and in all cases of irregular bleeding per vaginam, nonfunctional causes should be borne in mind. In undiagnosed bleeding per vaginam adequate diagnostic measures are indicated. Patients with a history of psychic depression should be carefully observed and the drug discontinued if the depression recurs to a serious degree. Any possible influence of prolonged Ovulen therapy on pituitary, ovarian, adrenal, hepatic or uterine function awaits further study. A decrease in glucose tolerance has been observed in a significant percentage of patients on oral contraceptives.

The mechanism of this decrease is obscure. For this reason, diabetic patients should be carefully observed while receiving Ovulen therapy. The age of the patient constitutes no absolute limiting factor, although treatment with Ovulen may mask the onset of the climacteric. The pathologist should be advised of Ovulen therapy when relevant specimens are submitted. Susceptible women may experience an increase in blood pressure following administration of contraceptive steroids.

Adverse reactions observed in patients receiving oral contraceptives—A statistically significant association has been demonstrated between use of oral contraceptives and the following serious adverse reactions: thrombophlebitis, pulmonary embolism and cerebral thrombosis.

Although available evidence is suggestive of an association, such a relationship has been neither confirmed nor refuted for the following serious adverse reactions: neuro-ocular lesions, e.g., retinal thrombosis and optic neuritis.

The following adverse reactions are known to occur in patients receiving oral contraceptives: nausea, vomiting, gastrointestinal symptoms (such as abdominal cramps and bloating), breakthrough bleeding, spotting, change in menstrual flow, amenorrhea during and after treatment, edema, chloasma or melasma, breast changes (tenderness, enlargement and secretion), change in weight (increase or decrease), changes in cervical erosion and cervical secretions, suppression of lactation when given immediately post partum, cholestatic jaundice, migraine, rash (allergic), rise in blood pressure in susceptible individuals and mental depression.

Although the following adverse reactions have been reported in users of oral contraceptives, an association has been neither confirmed nor refuted: anovulation post treatment, premenstrual-like syndrome, changes in libido, changes in appetite, cystitis-like syndrome, headache, nervousness, dizziness, fatigue, backache, hirsutism, loss of scalp hair, erythema multiforme, erythema nodosum, hemorrhagic eruption and itching.

The following laboratory results may be altered by the use of oral contraceptives: hepatic function: increased sulfobromophthalein retention and other tests; coagulation tests: increase in prothrombin, Factors VII, VIII, IX and X; thyroid function: increase in PBI and butanol extractable protein bound iodine, and decrease in T^3 uptake values; metyrapone test and pregnanediol determination.

References: 1. Royal College of General Practitioners: Oral Contraception and Thrombo-Embolic Disease, J. Coll. Gen. Pract. *13*:267-279 (May) 1967. **2.** Inman, W. H. W., and Vessey, M. P.: Investigation of Deaths from Pulmonary, Coronary, and Cerebral Thrombosis and Embolism in Women of Child-Bearing Age, Brit. Med. J. *2*:193-199 (April 27) 1968. **3.** Vessey, M. P., and Doll, R.: Investigation of Relation Between Use of Oral Contraceptives and Thromboembolic Disease. A Further Report, Brit. Med. J. *2*:651:657 (June 14) 1969. **4.** Sartwell, P. E.; Masi, A. T.; Arthes, F. G.; Greene, G. R., and Smith, H. E.: Thromboembolism and Oral Contraceptives: An Epidemiologic Case-Control Study, Amer. J. Epidem. *90*:365-380 (Nov.) 1969.

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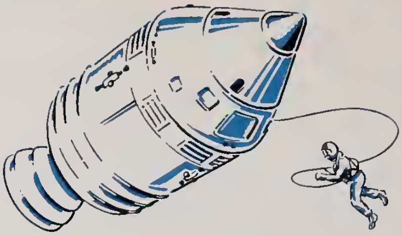

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President's Page

PREVENTING THE GENERATION GAP

Any parent who has teenage children understands the term "Generation Gap." He hears it in the music emanating from the teenager's bedroom or from the "Rec"-room; is conscious of it in his religious circle; and is constantly confronted with it in innumerable articles on almost any subject.

This gap has not been as evident in the medical profession, I believe, as in other areas of our society. We in the medical profession have always had to deal with the individual as such, as well as in relation to his community. We have been more cognizant than individuals in other professions and trades of the needs of the individual—physical, mental and social.

Why, then, any generation gap? If so, how can we overcome it? Professor Peter Rossi of Johns Hopkins University Department of Social Relations sums up the grievances of the medical students in this way: "too much professionalism, which means blindness to the needs of the society"; the "impersonality" of medical care in the United States today; the "paternalism" of doctors toward patients; and "racism" in such matters as medical school admissions.

If we acknowledge the fact that the medical student of today believes changes are necessary in the educational field and in the field of delivery of health care, then proper channels of communication must be set up to discuss the situations. This is the current thinking of the AMA and the local medical societies.

At the AMA Convention in Denver, Colorado, in 1969 the following resolution was adopted:

"Whereas, There is a growing interest among medical students, interns and residents regarding current methods of medical education and graduate experience; and

"Whereas, The constructive criticisms of medical students, interns and residents have a salutary effect in revising the current methods of medical education and medical practice; and

"Whereas, The American Medical Association, through its Council on Medical Education and other councils and committees, has recognized the importance of dialogue with medical students, interns and residents; therefore, be it

"*Resolved*, That the Council on Medical Education and other bodies within the AMA intensify their efforts to initiate meetings and encourage dialogue with the medical students, interns and residents in their respective states, preferably in conjunction with local chapters of SAMA."

We, of the D. C. Medical Society, at the 1969 Annual Business Meeting adopted a similar resolution, and subsequently the Executive Board appointed an ad hoc committee to meet with student representatives to explore the role of medical students in this Medical Society.

At the January 26, 1970 meeting the Executive Board considered and discussed the report submitted by this committee, and a motion was made, seconded, and carried that the Committee on Constitution and By-laws consider the establishment of a student memberhsip and that representatives of these members be present at annual and special meetings of the Medical Society and serve on various committees. These actions are now being implemented by the Committee on Constitution and By-laws.

In the interim the students have met and have set up a Council of D. C. Medical Students representing all 3 schools in the area. Its purposes are:

1. To serve as a forum for student discussion;
2. To act as a liaison between the medical students and the Medical Society of the District of Columbia and other bodies deemed appropriate by this Council;
3. To formulate and administer joint activities involving medical students of the District of Columbia.

By-laws have been adopted, officers elected, and actions begun. Projects now under consideration are:

1. Placement of interested students on committees of the D. C. Medical Society of mutual interest. Students will submit copies of minutes with pertinent comments to the Council.
2. An open meeting at the D. C. Medical Society building for all students interested in community health. The

meeting will serve as a forum of discussion to establish communication among the 3 medical schools on existing programs and to explore the possibility of holding a Community Health Convention at some time in the future.

The proper lines of communication for liaison between the individual practitioner (through the Medical Society) and the medical student have been established; it now behooves both parties to work toward better health care for the community. Let us hope that instead of a generation gap we will develop a coöperative effort of experience and expertise augmented by the glorious idealism, confidence, and aggressiveness of youth.

Frank S. Pellegrini

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Editorials

Therapeutic Abortion—The Other Side of the Coin

THE MARCH ISSUE of the ANNALS contained a lead article entitled "Therapeutic Abortion—Washington, D. C." by Drs. Edward J. Connor and Orhan H. Aydinel, both qualified gynecologists on the staff of Cafritz Memorial Hospital. The authors present a wide-ranging critique of therapeutic abortion in general and of abortion on demand in particular, and they conclude that "there are too many therapeutic abortions being done in the District of Columbia." Their paper was published in the best traditions of medical journalism in a free society, and there is no doubt of the authors' sincerity.

Yet there is a danger that the casual reader may have erroneously inferred that the authors reflect Medical Society policy on abortion. This, of course, is not the case. The Society is, even now, in the process of exploring this highly charged issue in the most careful manner. A sizable Ad Hoc Committee on Abortion, under the chairmanship of Dr. Robert B. Nelson, Jr., has been working on this problem intensively over the past few months and has recently distributed a questionnaire to discover the attitudes of the membership. As the data come in, we shall certainly be seeing more on this subject in the ANNALS and in the Society *Newsletter*.

The reëvaluation of abortion policy locally is indicative of the astonishingly rapid change in society's attitude toward abortion which has occurred in the past few years. Many responsible medical and lay organizations have shifted from wanting some "liberalization" of present abortion statutes to calling for the legalization of abortions when performed in a proper medical setting. In March, Hawaii adopted a law which permits residents of the Islands to obtain abortions on request, and New York and Maryland are considering similar measures.

It goes without saying that much of what Drs. Connor and Aydinel wrote reflects a moral rather than a medical position. Hence, it is surprising that nowhere in their article is any consideration given to what happens when an unwanted child is born to a mother who has been refused an abortion. As Erik Erikson has written, "The most deadly of all possible sins is the mutilation of a child's spirit," to which the Group for Advancement of Psychiatry has added, "There can be nothing more destructive to a child's spirit than being unwanted, and there are few things more disruptive to a woman's spirit than being forced without love or need into motherhood."[1] If this conclusion needs any empirical confirmation, we need look no further than the carefully controlled Scandinavian studies (cited in the GAP report) which clearly indicate that "the unwanted children were worse off in every respect."

Nor is this a problem which affects only the individuals directly involved. With the imminent danger of overpopulation posing an ever-increasing threat to the continued existence of civilization, society must no longer force women to bear unwanted children. The medical profession, with its proper emphasis on preventive medicine, must take a vigorous stand on this issue and assist women to terminate unwanted pregnancies with safety and dignity.

Although they never quite give it explicit recognition, the nub of the authors' distress is that most abortions are performed on grounds of which they disapprove. They would have us cut back sharply on current practice by permitting an abortion on psychiatric grounds "only if the mother is likely to commit suicide or if a high possibility of psychiatric decompensation is apt to occur." Fortunately, most psychiatrists in this area take a more humanitarian and less archaic view of mental health than do Drs. Connor and Aydinel. The anguish, despair, anxiety, and depression of women who find themselves in the midst of an unwanted pregnancy clearly constitute sufficient cause to recommend therapeutic abortion "for the preservation of the mother's . . . health," as required by the D. C. Code. To insist, as the authors do, that "therapeutic sterilization accompany therapeutic abortion for psychiatric indications unless unequivocal and acceptable reasons are presented to contraindicate the steri-

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[1] "The Right to Abortion: A Psychiatric View." G.A.P. Report No. 75 (1969).

Opinions expressed in contributions to the Editorial Section are those of the writers and do not necessarily reflect the views of the Medical Society of the District of Columbia

lization" seems dictatorial, morally reprehensible, and legally questionable. The further insistence on 6 months of psychiatric treatment in each case betrays the authors' ignorance of the realities of psychiatric practice and smacks of a punitive, not medical, response to the problem. Psychotherapy cannot be successful without strong motivation; once the pregnancy is terminated, psychiatric symptoms almost always disappear and motivation ceases to exist.

Many of the article's factual assertions are also open to question. For example, the authors suggest that the "intrinsic danger" of therapeutic abortions argues against their widespread use. Yet it is generally conceded that an abortion performed in the first trimester by a competent physician in a hospital is much safer than permitting the pregnancy to go to term. In Israel, where one-third of all pregnancies end in abortion, the mortality and morbidity rates are almost zero. Contrary to the authors' opinion, abortion is most certainly an effective means of population control, as the experiences in Japan and Hungary have shown.

I also seriously question whether "many abortions" are performed by licensed physicians "in defiance of the District of Columbia abortion law." The D. C. Code does not require any consultants, does not require D.C. residence of the woman, and does not specify where the abortion must take place. These matters are regulated by each hospital according to standards established by the AMA, hospital accrediting bodies, and local guidelines. And how can one say that "liberalizing the indications for therapeutic abortion does not decrease criminal abortions" when it is utterly impossible to get accurate figures on illegal abortions in this or any other country? Other than occasional arrests of "underground" abortionists, the only indication of the number of criminal abortions being performed comes from the frequency with which hospitals are called upon to repair the damage caused by illicit operations. Every year many hundred thousand women in this country alone want abortions strongly enough to seek inexpert help in shadowy back alleys if they are turned away at the hospital door. Often they suffer unnecessary trauma which forces them back to the hospital for treatment of peritonitis, septicemia, hemorrhage, or other complications arising from nonprofessional treatment. The cost of medical attention and hospital resources required by these women in the end far exceeds the amount which would have been needed to perform their abortions in the first place. And these women are the lucky ones. Others, whose shame or fear of discovery keeps them from seeking postabortion care, become the needless fatalities of our present abortion policy.

It is also particularly unfortunate that the present operation of the abortion laws discriminates so grieviously against the poorest members of our society. Although little attention is given to this point by Drs. Connor and Aydinel, facts which they recite support the contentions advanced by the American Civil Liberties Union in its current suit against the abortion practices of D. C. General Hospital. Therapeutic abortions are readily available at most private hospitals in the District. "There are few who can afford the price for psychiatric consultation that are turned down," according to Dr. Harry S. Douglas, as quoted in the article, but "there are none done at D.C. General."

While the case challenging this discrimination is still in the courts, the situation has already been righted somewhat. On the plaintiff's motion for a preliminary injunction, the District Court found that, although the Hospital's regulations established a standard for the abortion of indigents (i.e., patients seeking care at D. C. General) similar to that applicable in private hospitals, the Hospital was not complying with those regulations. In particular, the Court disapproved the Hospital's practice of rejecting, as ground for an abortion, mental illness which did not predate the pregnancy. Because the parties disagreed about the meaning of this order, the U. S. Court of Appeals issued an opinion clarifying the lower Court's action. The Appellate Court ruled that the Hospital could impose "no further criteria" which would prevent "a gynecologist who is willing to perform" an abortion from doing so "without delay" on the recommendation of 2 psychiatrists and in the absence of medical contraindications.

Although the problem of racial and economic inequities raised by the A.C.L.U. suit is important, it is just a fragment of a larger problem. So long as we regard abortion primarily as a criminal rather than a medical question, there is bound to be trouble. Every criminal statute affecting the practice of medicine produces conflict; prudent physicians, faced with the possible consequences of an arrest for abortion, are forced to make legal judgments in what is essentially a matter for their medical expertise.

In my opinion, the time is rapidly approaching when abortion will properly come to be regarded as a purely medical question. When performed by or under the supervision of a licensed physician, abortions should be entirely removed from the criminal law. This would place the responsibility for a decision to terminate a pregnancy on the patient and her physician, where it rightly belongs. Persons with moral or religious compunctions against abortion would not, of course, be required to participate in the procedure. But in this country, with its traditional separation of church and state, such religious and moral convictions should not limit the freedom of others who do not share such convictions. Nor, as was pointed out above, do the moral considerations all militate against abortions, when one contemplates the years of needless pain and suffering, for both mother and offspring, caused by the refusal to avert an unwanted birth.

"The Times They Are a-Changin'," the songwriter tells us, and very rapidly at that. On this issue, if organized medicine displays its traditional timidity, society may well move ahead without our blessing. Georges Clemenceau once said that war was much too serious a matter to be left to the generals. Similarly, society may well conclude that abortion is much too serious a matter to be left to the doctors and may take over the leadership which logically should be ours. It is imperative that we give intelligent and objective thought to this problem as physicians, without religious or moral bias. The Medical Society of the District of Columbia now has a golden opportunity to assume the lead in making it possible for women, regardless of socioeconomic status, to terminate unwanted pregnancies with medical safety, dignity, and privacy, and without public stigma. This would be the practice of humanitarian medicine at its very best.

Z. M. Lebensohn, M.D.

Drug Abuse—Manifestations of the Hallucinogen Abuser*

It is unlikely that students who use LSD will do so in a school setting since these drugs are usually used in a group situation under special conditions.

1. Users sit or recline quietly in a dream or trance-like state.
2. Users may become fearful and experience a degree of terror which makes them attempt to escape from the group.
3. The drug primarily affects the central nervous system, producing changes in mood and behavior.
4. Perceptual changes involve senses of sight, hearing, touch, body-image and time.

Note: The drug is odorless, tasteless, and colorless and may be found in the form of impregnated sugar cubes, cookies, or crackers. LSD is usually taken orally but may be injected.

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* This information is reproduced from "Parental Alert," copies of which may be obtained on request to the Broward County Medical Association, 2200 South Andrews Ave., Fort Lauderdale, Fla. 33316.

Errors in Diagnosing Pregnancy*

"It cannot be possible," declared an Ohio judge in 1928, "that physicians who are skillful in their profession could not tell the difference between a state of pregnancy and a tumor" (Glovka vs. Fortun [163 NE 309]). Nevertheless, it is possible, and misdiagnosing a tumor or some other pathological condition as pregnancy is not, in itself, proof of a physician's lack of skill.

Medical testimony in the cases involving mistaken diagnosing of pregnancy uniformly stresses the extreme danger to the fetus of operating on a pregnant patient. A policy of caution is therefore advisable whenever pregnancy is suspected. Of course, proper testing to confirm or rule out the suspected pregnancy is an element of good practice. However, the standard tests are not infallible, and X-ray films in the early stages of pregnancy may be inadvisable because of radiation danger to the fetus. Moreover, when pregnancy coëxists with a tumor, correct diagnosis may be extremely difficult. In some situations a policy of "watchful waiting" may be the best practice.

When a physician fails to recognize a normal pregnancy (as distinguished from an ectopic pregnancy), the most common misdiagnosis is uterine or ovarian tumor. The unfortunate aspect of this

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erroneous diagnosis is that the standard treatment for such tumors is surgery. In the case of pregnancy there is, in addition to the pain and suffering, medical expense and other adverse consequences of unnecessary surgery, such as the strong possibility that the surgery may cause a miscarriage. Therefore, a patient who is subjected to unnecessary surgery because the physician failed to diagnose pregnancy is a likely candidate for bringing a malpractice action.

The cases of failure to diagnose pregnancy suggest that caution should be exercised in ruling out a diagnosis of pregnancy, particularly when a recommendation of surgery is made. Both examination and tests are advisable if there are any symptoms of pregnancy. A medicolegal reference book gives this advice: "When in doubt, it is best to delay surgery, since the commonest abdominal 'tumor,' by far, during the ages of 15 to 40 is pregnancy."

In the case of ectopic (extrauterine) pregnancy, however, the mere failure to diagnose the condition is injurious, because an ectopic pregnancy always requires critical management, and the lack of proper treatment usually results in serious illness and often in death.

In spite of the serious, and even tragic, results of a misdiagnosis, failure to recognize an ectopic pregnancy is not, in itself, proof of negligence or malpractice on the part of the physician. In order for damages to be recovered, it must be shown that the physician failed to meet the proper standard of care in diagnosing and treating the patient's condition.

DR. CATHARINE KNOP was named Pediatrician of the Year at a dinner following the Annual Postgraduate Symposium presented by the Department of Pediatrics at Georgetown University Medical Center. Presentation of the award was made by Dr. Philip L. Calcagno (left), Chairman of the Department of Pediatrics. To the right of Dr. Calcagno is Dr. Robert T. Scanlon, the 1969 winner. Dr. Knop is Clinical Professor of Pediatrics at Georgetown and senior pediatrician of the Yater Clinic. In 1969 she served as President of the Women's Medical Society of D. C.

Navy Medical Corps Establishes a Birth Date

Until late last year no formal founding date for the Navy Medical Corps had been established; Navy doctors had participated in the celebrations for other Corps but never for one of their own. Numerous birth dates for the Medical Corps were considered, all of which would have been appropriate. Because the March 3, 1871 Act of Congress officially established the Medical Corps as a staff corps in the Navy, and also defined the rank and responsibilities of Naval medical officers, it was considered the most appropriate birth date for the Corps.

The first Naval surgeon went to sea in 1775. He served aboard the *U.S.S. Alfred*, a sloop of war, with a young lieutenant by the name of John Paul Jones, who was to hoist the first American flag ever to fly from a United States warship. The history of the Navy Medical Corps had begun.

But it wasn't until March 3, 1871 that the Medical Corps was formally established by Congress as a staff corps in the Navy. In 1871 the Navy Register listed 153 Medical Corps officers; they served aboard ships or at one of the 8 Naval hospitals, with the Marines, or on the staffs of the Fleet and Force Commanders. They have never had a Corps birthday to celebrate before.

So, on March 3, 1970, after what must be the longest gestation in history, Navy doctors all over the world recalled with pride their 195-year history of service to the Navy and Marine Corps as they celebrated the ninety-ninth anniversary of the formal founding of the Medical Corps—at their very first birthday party.

Navy Offers Scholarships to Medical Students

Qualified students are now eligible for Navy-sponsored scholarships at approved medical or osteopathic schools. The actual program will commence on July 1, 1970 when 100 scholarships will be offered to eligible personnel.

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Applications for the scholarships will be accepted from all students presently enrolled in an approved School of Medicine or Osteopathy as well as those who hold letters of acceptance from such schools but have not yet started their training. Military personnel on active duty who meet one of the above requirements are also eligible to apply if they have completed at least 2 years of their current service obligation.

Each applicant must be a United States citizen and must be qualified in all respects for a commission in the United States Navy. In addition to full tuition costs, students will receive the pay of a Naval officer, ranging from approximately $6,000 to $10,000 each year depending upon their rank, and full medical care for themselves and their dependents.

Students who are selected must serve on active duty with the Navy for a period of time that varies with the length of the scholarship they receive. Every student is eligible to receive additional training in a specialty of his choice.

Satisfactory completion of this Navy-sponsored scholarship program will lead to a commission in the Navy Medical Corps.

Additional information concerning this scholarship program may be secured from the Professional Division (Code 3174), Bureau of Medicine and Surgery, Department of the Navy, Washington, D. C. 20390.

HEALTH DEPARTMENT NOTES

Family Planning

Today, many governments of the world are giving serious consideration to establishment of family-planning programs in order to head off famine, social disorders, pestilence, and revolution, which inevitably develop with excessive increases in population.

Most of us in the medical profession realize that overpopulation of the world is a threat to the existence of mankind itself because of concurrent health problems.

Authorities estimate that within less than three-quarters of a century the world's population will have doubled and then redoubled. Overall problems resulting from this massive population increase would be disastrous, especially for underdeveloped countries of the world where productivity of life-supporting essentials is even now well below the rate required for human survival.

Six years ago last month the D. C. Department of Public Health began to cope with the problem of unplanned and unwanted infants in the District of Columbia by establishing a family-planning program with a Congressional grant of $1,000, the first appropriation made from Federal funds for this purpose anywhere in the country. Later that year an additional $24,000 was authorized for our program.

Although uncertain as to the degree of public acceptance, Health Department officials were confident of the program's value to District residents. In spite of the controversial nature of family planning at that time, the program was well received within its first year and has now become an integral part of the Health Department's permanent structure.

From the very beginning, participation in the program has been entirely voluntary on the part of our patients.

When the program began only women who had a baby and were patients in the maternity clinics of the Health Department were eligible. However, as the program progressed, the eligibility standards were relaxed until today all women except unmarried minors who have never been pregnant are eligible to receive information and devices. We also receive minors referred from venereal disease clinics who have the written permission of a parent stating that there is no objection to the youth receiving devices and information.

The contraceptive to be used is determined in conference between the patient and her physician. Devices available are oral contraceptives, intrauterine devices, chemical preparations, and instructions in the rhythm method.

Although there has been much publicity recently about the side-effects of oral contraceptives, we still find that approximately 75 per cent of our patients prefer them. Until more stringent regulations are issued for the use of oral contraceptives, we will continue to make them available in our facilities.

The majority of the approximately 28,000 women who have visited the family-planning clinics of the Health Department since April, 1964, have been aware that birth control is possible. However, in many cases knowledge of contraceptive methods was meager, ineffectual, and sometimes misleading.

We have found that many pregnancies have resulted from unsuccessful attempts at control. In some cases, desperation has led to attempted abortion, some with unfortunate results. Our family-planning program is designed to enlighten and help such women.

At the present time we have 13 family-planning clinics located throughout the City. Such a clinic is placed in each of the new neighborhood health centers. Two of these centers have been opened this year in the Anacostia area. We also have a Health Department Family Planning Information Center where District residents may call for detailed information about the program and, when necessary, be referred to a nurse or physician. This number is 629-4949.

I look at our family-planning program as a long-term investment in the future as well as one paying dividends immediately. Planned parenthood among low-income families will lead to a more healthy and socially adjusted family, bring about sizable reductions in future financial demands on the family as a unit, and lessen economic and employment demands on the community as a whole.

Raymond L. Standard, M.D., M.P.H.
D. C. Director of Public Health

Dr. Standard Named D. C. Director of Health

Dr. Raymond L. Standard was named Director of the D. C. Department of Public Health by Mayor Walter E. Washington at a news conference, March 6. At the same time he announced the establishment of a new Department of Human Resources.

RAYMOND L. STANDARD, M.D.

Following the resignation of Dr. Murray Grant in October 1969, Dr. Standard was named Acting Director of the Health Department. A native of Hartford, Conn., he attended its public schools and served for 30 months in the U. S. Army before he came to Washington to study at Howard University. From the College of Liberal Arts he received his B.S. degree in 1948 and in 1952 his medical degree from the College of Medicine. He interned for a year at the Homer G. Phillip Hospital in St. Louis and served a 3-year residency in internal medicine at Freedmen's Hospital, from 1953 to 1956. Later he continued his studies at Johns Hopkins University, receiving the degree, Master of Public Health, in 1967.

In the intervening years, 1956 to 1960, he was Clinical Director of Internal Medicine at Provident Hospital, Baltimore. Since 1960 he has been Clinical Instructor in Internal Medicine at Howard University.

He joined the D. C. Health Department in 1964 as Chief of the Clinical Services Section of the Northwest Central Clinic. Two years later he was appointed Chief of the Adult Health and Geriatrics Division in the Bureau of Chronic Disease Control. He moved up to Chief of that Bureau in 1968 and served in that post until he was named Acting Director.

To the new Department of Human Resources the Mayor transferred the functions of the Departments of Health, Welfare, Vocational Rehabilitation, and Veterans Affairs. The Director of the new Department is Mr. Philip J. Rutledge.

Patients Needed at Clinical Center

THE COÖPERATION OF PHYSICIANS is requested in the referral of patients for the following studies being conducted at the Clinical Center of the National Institutes of Health in Bethesda, Md.:

Chronic Lymphocytic Leukemia: A continuing study of chronic lymphocytic leukemia is being made by the Radiation Branch of the National Cancer Institute. Patients who have received no treatment are preferred and will be admitted as inpatients for study and treatment. Upon discharge the referring physician will receive a summary of the findings and of the treatment which has been instituted.

Physicians interested in having their patients considered for admission to this study may write or telephone Dr. Ralph E. Johnson, Clinical Center, Room B1B-41B, National Institutes of Health, Bethesda, Md. 20014; telephone· (301) 496-5457.

Immune Deficiency Diseases: Needed by the National Cancer Institute for these studies are referrals of patients with congenital, acquired, or Swiss-type agammaglobulinemia, selective immunoglobulin deficiencies, thymic dysplasia, Di George syndrome, and related disorders. All patients will have complete evaluation of their immune competence. When indicated, bone marrow or thymus transplantation or replacement therapy will be instituted. On completion of studies, patients will be returned to the care of the referring physician, who will receive a summary of findings.

Physicians interested in having their patients considered for admission to these studies may write or telephone Dr. Daniel Ein or Dr. William D. Terry, Clinical Center, Room 4-B-10, National Institutes of Health, Bethesda, Md. 20014; telephone: (301) 496-1085 or 496-1376.

Systemic Lupus Erythematosus Nephritis: A therapeutic study of lupus nephritis is being conducted by the National Institute of Arthritis and Metabolic Diseases. Patients with systemic lupus erythematosus may develop an immune complex nephritis which can be fatal. Their serum often contains antibodies to nucleic acids.

Clinic physicians are interested in obtaining 10–20 ml. of serum from lupus nephritis patients who might be willing to enter the Clinical Center for a 2- to 3-month period. If certain clinical and laboratory criteria are fulfilled, these patients would be admitted for a therapeutic study involving cyclophosphamide. Additional studies underway include attempts to define the relationship of viral infection to the disease. Patients early in their course are preferred but those already on corticosteroids will be considered.

Physicians who have patients that might be suitable for this study may write or telephone Dr. Norman Talal or Dr. John L. Decker, Clinical Center, Room 9N218, National Institutes of Health, Bethesda, Md. 20014; telephone: (301) 496-1474.

DOCPAC BRIEFS

or
Don't Lose the Game

OFTEN I AM ASKED, "Why join DOCPAC? What can it do for me?" and I state that "DOCPAC's function is to elect congressmen and senators and to help prepare legislation which is favorable to the private practice of medicine and dentistry." If physicians and dentists and members of the allied medical field do not join as a group to prevent the gradual erosion of the privilege of private practice, who else will do it? Individual contributions to candidates do not have the same impact as a larger contribution from a politically-oriented group which knows at what time, at which location, in what amount, and to whom a contribution should be made.

The physician or dentist who does not wish to become politically active but who is interested in the preservation of the private practice of medicine and dentistry should join DOCPAC and contribute to it because in that way his voice can be heard. I hope that every physician and dentist will join because only in this way can we honestly express the feelings of the medical, dental and allied professions.

Remember, if the ball game is lost, don't turn to someone and say: "What could I do? How could I have prevented this?"

KENT A. PETERSON, M.D.

Portraits of Faculty Members Unveiled in GW Library

THREE ADDITIONAL PORTRAITS of faculty members will enhance the walls of the new George Washington University School of Medicine when it is completed on the GW campus, hopefully in 1972. Groups of friends and associates had commissioned the paintings of Dr. Walter Freeman, formerly Professor of Neurology, now retired and living in San Francisco; Dr. James W. Watts, Professor of Neurological Surgery; and Dr. Charles Mayo Goss, Visiting Professor of Anatomy. More than 50 relatives, friends, and colleagues gathered to honor them at the unveiling of the portraits in the Medical School's Library, March 25. Drs. Freeman and Watts are Past Presidents of the D.C. Medical Society.

The oils, presented to Dean John Parks by Dr. John L. Fox, were done by Roberto Fantuzzi, an Italian artist who specializes in group portraits. Members of the Departments of Neurology and Neurological Surgery, along with former residents and friends, sponsored the Freeman and Watts paintings, while the Goss portrait was a gift from the Department of Anatomy.

Dr. Freeman joined the GW faculty in 1924 when neurology was taught in the Division of Psychiatry. He was named head of the Neurology Department when it was established in 1932. Dr. Freeman said that some of the first activity along the lines of physical treatment for mental disorders had been carried out in the GW Medical School, including the first prefrontal lobotomy in this country (1936), the first insulin shock therapy, the first metrazol therapy, and the first electroshock therapy in the city.

A teaching tableau was chosen by Dr. Watts because it emphasizes teaching and the training of neurosurgical residents. Five of the men in the painting are graduates of foreign medical schools; they are all chiefs of neurosurgical services, with professorial rank, and 4 occupy high posts in their own countries. Dr. Fox, now Chief of Neurosurgery at the VA Hospital in Washington, is one of the 7 residents portrayed, and Dr. Donald Cooney, Chief Resident in Neurosurgery at GW, symbolizes all residents in the training program.

DR. WALTER FREEMAN (whose portrait is at the right) and DR. JAMES W. WATTS (the focus of the group picture) were honored at the unveiling of their portraits in the GW Medical Library, March 25.

The Goss portrait was presented to the school by Dr. Ira Telford, Chairman of Anatomy. Dr. Goss, whose teaching career extends over a half century, has served on the faculties of Yale, Columbia, and Alabama and Louisiana State Universities; he has edited 4 editions of Gray's Anatomy and is presently working on his fifth (the 29th).

LETTERS TO THE EDITOR

Therapeutic Abortion

I was quite disturbed to read the lead article in the last issue of the ANNALS on the abortion question.

Having served as Chairman of the Therapeutic Abortion Committee of Sibley Hospital for over 5 years now, I believe I am thereby qualified to disagree completely with the article in general and with the conclusions of the authors in particular. Many of their statements are not truly in keeping with the facts, in my opinion, especially in view of today's thinking on this question.

I think their article is more emotionally inspired than scientifically inspired or objective. I also think that some of their proposals are most naïve and out of joint with the thinking of the public, the majority of physicians, and certainly with the legislatures of many states.

EDWARD W. NICKLAS, M.D.

Therapeutic Abortion

Connor and Aydinel's "Therapeutic Abortion—Washington, D. C." in the March 1970 MEDICAL ANNALS is so biased and demonstrates so little knowledge of the psychiatric aspects of therapeutic abortions that I take this liberty of writing to you in the hope that a more detached attitude toward the problem may prevail.

Biases for and against therapeutic abortion may be so strong that great care must be exercised to avoid, however unwittingly, the use of medical reasons to justify one's particular bias. Connor and Aydinel's use of such pejorative expressions as "there are too many therapeutic abortions being done" and "abortion centers" reveals much more bias than detached conclusion. Bias is further evidenced in the authors' imposing a defensive posture upon the pregnant woman seeking an abortion by the assumption that "therapeutic" sterilization should be performed unless reasons are given to the contrary. In what way is this "therapeutic"? The suggestion appears to be more punitive than therapeutic. The authors evidently assume that if a therapeutic abortion is indicated for psychiatric reasons, pregnancy for that woman is permanently contraindicated. I should like to assure the authors that a number of women who have appropriately received therapeutic abortions during exceedingly vulnerable periods of their lives have become pregnant at a later time and have done very well emotionally during the pregnancy and in the acceptance of the child after delivery.

Eastman's stress on "grave maternal disease" to justify therapeutic abortion is outmoded as medical advances increasingly emphasize the importance of maintaining the health of patients before they are placed on the critical list.

The claim that there is lack of follow-up on those women who have received therapeutic abortions for psychiatric reasons certainly is partially valid. However, my colleagues and I have examined and treated many women who have been forced to bear children, many of them making nothing short of heroic efforts to overcome the deepest feelings of hostility toward the unwanted child, the mate, and often the physician. My colleagues and I have also examined and treated countless children and adults who have made comparably heroic efforts, sometimes successful and sometimes not, to overcome the deepest sense of rejection and unwantedness.

Where biases (philosophic, religious and the like) exist, they should be recognized and respected. However, these should not be disguised as medical justifications.

LEON YOCHELSON, M.D.
Professor and Chairman, Department of Psychiatry, George Washington University School of Medicine

The Gordon Medical Scholarship Program*

I am very pleased to announce that the first $5,000 Medical School Scholarship in my national campaign was donated by the husband-wife medical team of Dr. Andrew Nettleship, Senior Research Associate, and Dr. Mae Banwell Nettleship, Director, Antaeus Lineal Research Associates, Fayetteville, Ark. Dr. Nettleship is Chief of Laboratories of the Veterans Administration Hospital in Fayetteville. The recipient of the Nettleship Scholarship is Mr. Nicholas P. Lang, a first-year student at the University of Arkansas School of Medicine. The award was made through the auspices of the Washington County (Arkansas) Medical Society.

I have received hundreds of letters about the scholarship program. Each donor receives his "Certificate of Meritorious Service to the Future of Medicine in America" by contributing $5,000 to his local medical society, thus making it possible for one of his area's worthy but financially deprived premedical students to attend medical school.

No guarantee of repeat contributions is requested although I disclaim any responsibility if the donor gets hooked as I have on the joys of healing the ills of society and advancing our profession in this wonderful way.

MAURICE B. GORDON, M.D.

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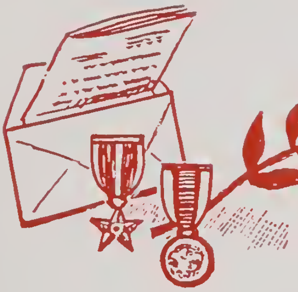
* See MEDICAL ANNALS for January, 1970, page 68.



News & Personals

Summary of Executive Board Actions

Proceedings of March 23 Meeting

Dinner was served for Board members in the Exhibit Hall of the Medical Society. Dr. Robert J. Coffey, Chairman, presided at the meeting that followed, which was attended by Drs. Henry D. Ecker, William S. McCune, Frank S. Bacon, Marvin C. Korengold, James E. Boland, John J. Hughes, C. Willard Camalier, Jr., and Mr. Thomas Sadler, Secretary. The meeting was called to order at 7:15 p.m.

The minutes of the February 24, 1970 meeting were approved as read.

Committee Meetings: The Secretary reported the following committees had met since the last meeting of the Board:

February	25	Committee on Constitution and By-laws
	27	Relative Value Study Committee
March	2	Program Committee, Scientific Assembly
	2	Committee on Occupational Health
	3	Committee on Medicolegal Problems
	4	Fee Review Committee
	5	Physician Placement Committee
	5	Committee on Child Welfare
	6	Committee on Medicine and Religion
	9	Committee on Environmental Health
	10	Board of Credentials
	10	Subcommittee on Abortions
	11	Policy and Steering Committee (RMP)
	12	Committee on Medical Aspects of Sports
	13	Relative Value Study Committee
	16	Program Committee, Scientific Assembly
	17	Grievance Committee
	18	Legislative Committee
	19	Membership Committee
	20	Utilization Committee
	20	Committee on Smoking and Health
	20	Committee on Public Welfare

Board of Credentials: On recommendation of the Board of Credentials, 11 applicants were elected to Active membership and 1 to Associate membership. Their names appear on page 292.

Approval was given to the following changes in membership status:

Transfers

Active to Associate: William S. Anderson, Paul A. Dorn, Jr., Elmo Masucci, and Douglas B. Price
Special to Active: Francis D. Threadgill

Resignations

Active: Clark P. Halstead and David Arthur St. Martin
Associate: Alfred E. Jackson, Philip E. Jones, and Glenn Arthur Meyer

Committee on Occupational Health: After considerable discussion on the recommendations submitted by this Committee the following motions were made and approved:

1. To deny the recommendation that the present fee schedule for Workmen's Compensation be abandoned and that "usual and customary" fees be charged for services rendered.

2. To accept the recommendation of the Committee that the Workmen's Compensation fee schedule be put on the Relative Value Scale for the District of Columbia with the conversion factor to be determined by negotiation with the insurance adjustors.

3. Regarding proposed legislation for the District, to endorse the recommendation of the Committee that the following examinations be considered as minimum requirements for food-handlers: medical history and physical examination; initial serology; examination of hands, skin, nose and throat with culture where indicated; tuberculin test and/or chest X-ray once a year.

Policy on Therapeutic Abortion: Dr. Ecker reported on the response to the memorandum distributed to the membership in regard to a therapeutic abortion policy. Members were asked to check their preference on continuing the present policy of the Medical Society of the District of Columbia (also of the American Medical Association) on therapeutic abortion which requires:

1. Licensed physician
2. Procedure performed in a hospital accredited by the Joint Commission on Accreditation of Hospitals
3. Consultation by 2 other physicians of recognized professional competence who have examined the patient and have concurred in writing that there is documented medical evidence (a) that continuance of the pregnancy may threaten the health or life of the mother; or (b) that the infant may be born with incapacitating physical deformity or mental deficiency; or (c) that continuance of a pregnancy resulting from legally established statutory or forcible rape or incest may constitute a threat to the mental or physical health of the patient

or approval of the recommendations of the Ad Hoc Committee on Abortions which require:

1. Licensed physician
2. Procedure performed in a licensed hospital accredited by the Joint Commission on Accreditation of Hospitals
3. Concurrence by 1 other qualified physician who has carefully examined the patient
4. Medical indications, left entirely to the discretion of the physician involved. The same physician-patient relationship should exist as in any other medical problem. This in effect leaves the medical aspects of the problem to licensed physicians operating in accredited situations. However, under no condition shall a therapeutic abortion for psychiatric indications be performed after 20 lunar weeks.

As of the Board meeting date a total of 406 replies had been received.

A motion was made and carried to submit the results of the poll on a therapeutic abortion policy to the Executive Board's Subcommittee on Abortions with the request that the Subcommittee submit a recommendation to the Executive Board at the April meeting.

Regional Medical Program: The Board accepted for information the report on RMP activities as submitted by Dr. Arthur E. Wentz, Coördinator.

Relative Value Study Committee: A motion was made and carried to approve the additions and changes to the Relative Value Scale as recommended by the Committee and listed in the April *News*.

Membership Committee: The following recommendations of the Committee were approved:

1. That a roster of the membership be published as a supplement to the ANNALS when Society finances will permit.
2. That a luncheon meeting be arranged for the Membership Committee and representatives

Synthroid®
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Indications: SYNTHROID (sodium levothyroxine) is specific replacement therapy for diminished or absent thyroid function resulting from primary or secondary atrophy of the gland, congenital defect, surgery, excessive radiation, or antithyroid drugs. Indications for SYNTHROID (sodium levothyroxine) **Tablets** include myxedema, hypothyroidism without myxedema, hypothyroidism in pregnancy, pediatric and geriatric hypothyroidism, hypopituitary hypothyroidism, simple (non-toxic) goiter, and reproductive disorders associated with hypothyroidism. SYNTHROID (sodium levothyroxine) **Injection** is indicated in myxedematous coma and other thyroid dysfunctions where rapid replacement of the hormone is required. When a patient does not respond to oral therapy, SYNTHROID (sodium levothyroxine) injection may be administered intravenously to avoid any question of poor absorption by either the oral or the intramuscular route.

Precautions: As with other thyroid preparations, an overdosage may cause diarrhea or cramps, nervousness, tremors, tachycardia, vomiting and continued weight loss. These effects may begin after four or five days or may not become apparent for one to three weeks. Patients receiving the drug should be observed closely for signs of thyrotoxicosis. If indications of overdosage appear, discontinue medication for 2-6 days, then resume at a lower dosage level. In patients with diabetes mellitus, careful observations should be made for changes in insulin or other antidiabetic drug dosage requirements. If hypothyroidism is accompanied by adrenal insufficiency, as Addison's Disease (chronic subcortical insufficiency), Simmonds's Disease (panhypopituitarism) or Cushing's syndrome (hyperadrenalism), these dysfunctions must be corrected prior to and during SYNTHROID (sodium levothyroxine) administration. The drug should be administered with caution to patients with cardiovascular disease; development of chest pains or other aggravations of cardiovascular disease requires a reduction in dosage.

Contraindications: Thyrotoxicosis, acute myocardial infarction.

Side effects: The effects of SYNTHROID (sodium levothyroxine) therapy are slow in being manifested. Side effects, when they do occur, are secondary to increased rates of body metabolism: sweating, heart palpitations with or without pain, leg cramps, and weight loss. Diarrhea, vomiting, and nervousness have also been observed. Myxedematous patients with heart disease have died from abrupt increases in dosage of thyroid drugs. Careful observation of the patient during the beginning of any thyroid therapy will alert the physician to any untoward effects.

In most cases with side effects, a reduction in dosage followed by a more gradual adjustment upward will result in a more accurate indication of the patient's dosage requirements without the appearance of side effects.

Dosage and Administration: The activity of a 0.1 mg. SYNTHROID (sodium levothyroxine) TABLET is equivalent to approximately one grain thyroid, U.S.P. Administer SYNTHROID tablets as a single daily dose, preferably after breakfast. In hypothyroidism without myxedema, the usual initial adult dose is 0.1 mg. daily, and may be increased by 0.1 mg. every 30 days until proper metabolic balance is attained. Clinical evaluation should be made monthly and PBI measurements about every 90 days. Final maintenance dosage will usually range from 0.2-0.4 mg. daily. In adult myxedema, starting dose should be 0.025 mg. daily. The dose may be increased to 0.05 mg. after two weeks and to 0.1 mg. at the end of a second two weeks. The daily dose may be further increased at two-month intervals by 0.1 mg. until the optimum maintenance dose is reached (0.1-1.0 mg. daily).

Supplied: Tablets: 0.025 mg., 0.05 mg., 0.1 mg., 0.15 mg., 0.2 mg., 0.3 mg., 0.5 mg., scored and color-coded, in bottles of 100 and 500. Injection: 500 mcg. lyophilized active ingredient and 10 mg. of Mannitol, N.F., in 10 ml. single-dose vial, with 5 ml. vial of Sodium Chloride Injection, U.S.P., as a diluent.

SYNTHROID (sodium levothyroxine) INJECTION may be administered intravenously utilizing 200-400 mcg. of a solution containing 100 mcg. per ml. If significant improvement is not shown the following day, a repeat injection of 100-200 mcg. may be given.

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Doctor Watson
xposes a double agent

he Embankment. Two figures emerge into silhouette against a treet lamp. The flare of a match reveals the profile of Sherlock As he lights his calabash, his companion speaks:

e, Holmes, that amazing intuition of yours has proved right /hat we're looking for is a single entity. I thought we were with several others—even twins. But now—I'd say we've ed a double agent."

e more, Watson, and be quick about it!"

withdraws a folded paper from inside his greatcoat, and oud from it):

y to the whole cypher is SYNTHROID (sodium levothy-...

Watson, not so loud! You'll alert our quarry."

continues): "A single entity that serves two functions."

ter stroke, Watson."

along, Holmes. In the neighborhood of 95% of the circulat-oid hormone is levothyroxine—T_4 as you call it. T_4 is bound xine-binding proteins in the serum. It becomes available only y to tissue cells—as free thyroxine."

"Is that why there's such a smooth, predictable response, Watson?"

"Quite! With agent T_4, SYNTHROID, the chances of a precipitous rise in metabolic rate are lessened."

"But how does 'free' thyroxine fit into the picture?"

"Well, Holmes, you might call it the tissue thyroid hormone—because 'free' thyroxine (that is, thyroxine not bound to protein) is active at the tissue level. It is gradually released from thyroxine-binding proteins. Each daily dose of SYNTHROID is mostly bound to thyroid-binding proteins, and slowly released as 'free' thyroxine—the form in which it is metabolically active."

"Magnificent, Watson! So protein-bound thyroxine is the major form of circulating thyroid hormone, and it is released as 'free' thyroxine. And that's why SYNTHROID is able to simulate the normal process so artfully. Q.E.D."

"Not so fast, Holmes. SYNTHROID works for the *physician*, too. Because its dosage is more precisely controllable, and because response is so smooth and predictable, the *doctor* gets fewer phone calls in the wee hours from agitated patients. Both parties get more sleep!"

"Comforting, my dear doctor, to know that SYNTHROID, the 'single agent,' cleverly does the job of two."

Synthroid® (sodium levothyroxine)

of the D. C. osteopaths to discuss requirements for membership in the Medical Society of D. C.

There being no further business the meeting was adjourned at 10:35 p.m.

MEETINGS

The 119th Annual Convention of the American Medical Association will be held in Chicago, June 21–25. As usual, a large attendance is expected. There will be general scientific meetings, section programs, a research forum, motion pictures, and hundreds of scientific and industrial exhibits to feature the latest innovations in equipment, services and drugs. The complete scientific program appeared in the May 4 issue of JAMA.

A coupon for advance registration, with or without reservation for the Scientific Awards Dinner, was included in the March 23 issue of JAMA, page 1920, to be returned before June 1. Reservations are limited to approximately 500 for the reception and dinner in honor of the Scientific Award Winners, scheduled for Tuesday evening, June 23 Dinner tickets are $10.00 each, payable in advance; after June 1 tickets may be purchased in Chicago.

A Postgraduate Course on "The Diagnostic Evaluation of Children with Learning Problems: A Systems Approach" will be held at the Washington Hilton Hotel, June 3–5, under the auspices of the Department of Neurology of the Children's Hospital of the District of Columbia and the George Washington University School of Medicine.

The objective of the course is to familiarize physicians, psychologists, educators, and other professional personnel interested in the diagnostic evaluation process with new concepts that have been developed in the Learning Research Unit at Children's Hospital. The focus will be on procedures developed for use by an interdisciplinary team to produce a setting under which the child can relate more successfully to a school environment.

Registration will be limited. For information write to Dr. Mark N. Ozer, Director, Learning Research Unit, 2125 Thirteenth Street, N.W., Washington, D. C. 20009.

The American Medical Society on Alcoholism will hold its 2-day annual meeting in Chicago, June 23 and 24, in conjunction with the Annual Convention of the American Medical Association. The business meeting will begin at 1 p.m., June 23, in the American Hospital Association's building. The scientific program will start at 2:00 p.m. Three physicians, Drs. George Burch, Charles Lieber, and Earnest Wynder, will participate in the program to discuss alcoholism and its effect on the heart and liver and its relationship to cancer.

Wednesday, June 24, the Society will have a special program at the Rehabilitation Center of Lutheran General Hospital in Park Ridge, Ill., with Dr. Nelson J. Bradley, Director of the Center, in charge.

This meeting is the first national meeting of the Society. Although membership is limited to physicians, professional people whose chief interest and work are in the field of alcoholism may attend. Applications for registration should be requested from Dr. Ruth Fox, President of the Society, 150 East 52nd Street, New York, N. Y. 10022.

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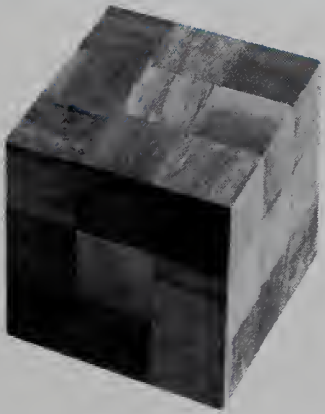

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Action and Uses: Urised is effective in cystitis, pyelitis, trigonitis in pregnancy, urethritis, and other urinary tract infections where the invading organisms, such as E. coli, S. aureus and albus, are susceptible to methenamine and methylene blue in an acid medium.

URISED also is useful as a prophylactic measure prior to urinary tract instrumentation or operation. In acute fulminating infections, URISED may be used for symptomatic relief while awaiting specific laboratory diagnosis. May be combined with specific therapy where indicated.

Effects: Rapid relief of pain, relaxation of smooth muscle spasm through parasympatholytic action of atropine and hyoscyamine; pus cell content decreased.

Administration and Dosage:

Adults: Two tablets, orally, four times per day, followed by liberal fluid intake.

Children: One-half the adult dose.

Acute cases: Initially two tablets every hour for three doses, followed by the recommended daily administration.

Precautions: Administer with caution to persons with known idiosyncrasy to atropine and cardiac disease. While under this therapy the urine is blue; patients should be so advised to allay apprehension.

Side Effects: Neither irritation nor untoward reactions have been reported; however, if pronounced dryness of the mouth, flushing, or difficulty in initiating micturition occurs, decrease dosage. If rapid pulse, dizziness or blurring of vision occurs, discontinue use immediately. Acute urinary retention may be precipitated in prostatic hypertrophy.

Contraindications: Glaucoma, urinary bladder neck or pyloric obstruction, duodenal obstruction and cardiospasm. Hypersensitivity to any of the ingredients.

How Supplied: Bottles of 100, 500 and 1,000 tablets.

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The Continuing Medical Education Section of Howard University College of Medicine will present its second **Special Course on Tropical Medicine and Parasitology** for physicians, July 13–17, from 9 a.m. to 5 p.m. each day.

The sessions will consist of presentations, demonstrations, and group participation in discussions on the major causes of disabilities and deaths in developing countries. Emphasis will be placed on their definition, identification (diagnosis), management (treatment), and prevention or control. The course is intended for practicing physicians, residents, interns, public health personnel, or anyone likely to see patients with exotic diseases.

The participating faculty will be Drs. Margaret E. Grigsby, Vinod R. Mody, Hildrus A. Poindexter, and Madison S. Briscoe. Dr. Grigsby has recently served on the smallpox eradication and measles control program in Nigeria.

The registration fee is $35.00. Advance registration should be made with Dr. Hildrus A. Poindexter, Professor of Community Health Practice, Howard University College of Medicine, Washington, D. C. 20001.

GENERAL NEWS

Children's Hospital is conducting a study of newly born babies in families where there is a history of obesity that began in adolescence. Present evidence suggests that the majority of these babies will become fat early in life. Furthermore, there is reason to believe that a metabolic defect causing obesity may be detectable early in life. For a child to be eligible for the study one or both parents should have obesity that began in adolescence. Dr. Felix P. Heald, Pediatrician-in-chief at Children's, expresses interest also in parents who have a history of obesity during adolescence but have lost their excessive fatness. Interested and eligible families should call or write Dr. Heald at Children's Hospital, 2125 13th Street, N.W., Washington, D. C. 20009; telephone (202)835-4158. There will be no cost to the patient or his family.

The Division of Ophthalmology of Georgetown University School of Medicine is accepting applications for the next 2-year training program for ophthalmic assistants which will start July 1, 1970. The course consists of 4 noncredit semesters with 2 weeks' annual vacation.

The course is open to men and women, ages 20 to 40 years. Applicants must have 2 years of college, or certification as a registered practical nurse, or 2 years of office experience with sponsorship by a certified ophthalmologist. There is no tuition.

Qualified applicants should write for a brochure and application form to Dr. P. Y. Evans, Georgetown University Medical Center, Division of Ophthalmology, 3800 Reservoir Rd., N.W., Washington, D. C. 20007.

The American Heart Association announces that June 5, 1970, is the deadline for acceptance of abstracts of papers and for applications for scientific exhibits and cardiovascular films to be considered for presentation at its 1970 Scientific Sessions. The 4-day meeting is scheduled from November 12 through November 15 in Atlantic City, N. J. Papers intended for presentation must be based on original investigation in the cardiovascular or related fields, and results and conclusions should be summarized in the abstract. AHA forms for submitting abstracts, films and exhibits may be secured from the Department of Medical Education at the Association's National Office, 44 East 23rd Street, New York, N. Y. 10010.

AMA-ERF checks totaling more than $25,000 were presented, March 27, to the Deans of Medicine of the 3 D. C. Schools of Medicine by Dr. Frank S. Pellegrini, President of the Medical Society of the District of Columbia. The checks represented the 1969 allotment to the District of Columbia from a total of $956,909.64 distributed to medical schools in the United States and Canada as a result of contributions made by physicians and Woman's Auxiliaries to the AMA Education and Research Foundation. Present to receive the checks were Dr. John Parks, Dean of George Washington, $8,033.96; Dr. Albert K. Harden, Dean of Howard, $4,416.46; and Dr. John C. Rose, Dean of Georgetown University, $12,656.46. The cover of this issue of the Annals shows the participants in the brief ceremony, namely (left to right), President Pellegrini, Deans Parks, Harden and Rose, and, in the center, Mrs. Raymond A. Osbourn, President of the Woman's Auxiliary to the D. C. Medical Society

"Exfoliative Cytology," published by the American Cancer Society, is available without charge to Washington physicians by the D. C.

Division of the American Cancer Society, 2007 Eye Street, N.W.

Exfoliative cytology has long been of prime importance to ACS because of the great potential it has for the saving of lives through the early detection of cancer. *CA, a Cancer Journal for Clinicians* of ACS recently published a series of articles on exfoliative cytology applied to cancer in various parts of the body. This 77-page booklet, a reprint of the series, with 125 tissue slides reproduced in color, is intended to aid the medical profession in accomplishing earlier diagnosis and greater curability of cancer.

Abridged Index Medicus is a new monthly medical bibliography published by the National Library of Medicine for the needs, particularly, of the practicing physician, but useful also to libraries of small hospitals and clinics that have hesitated to subscribe to the more comprehensive and costly bibliographies. Each issue will contain citations to articles in 100 English-language journals representing all fields of clinical medicine. The content of the *Abridged Medicus* is identical to the contents of the *Index Medicus* except for the greater selectivity of journal coverage. The new monthly bibliography is sold by the Superintendent of Documents, Government Printing Office, Washington, D. C. 20402, at an annual subscription rate of $12.00.

The Washington Medical Center has contracted with Mosler Information Systems of Hamilton, Ohio, to install a high-speed microfilmed information storage and retrieval system that will provide it with the most advanced medical records system in the country. The equipment will be linked to the Center's IBM 360 computer. A physician wishing to review a patient's medical record will telephone the Medical Records Department and identify the patient. The data will be presented visually on the monitor within 4 to 7 seconds. Magnification and minute inspection of details are possible, and the equipment has the facility for making a reproduction.

Other data will also be stored, including scientific articles from medical journals and an index of "common drugs of abuse." Mr. Robert V. Buchwald, Director of the Medical Data Center, indicated that the system should be operational by May 1971.

The American Association for Accreditation of Laboratory Animal Care announced in March that a total of 140 laboratory animal facilities in the United States and Canada had been fully accredited by the Association. Included in the list were the Animal Research Facility at Georgetown University and the Animal Section at Howard University College of Medicine.

NEW MEMBERS

Active

James K. Cooper, M.D. Office: 2150 Pennsylvania Avenue, N.W. Born in Mobile, Ala. Medical degree: Vanderbilt University, 1962. Specialty: Internal Medicine.

Peter C. Donshik, M.D. Office: National Institutes of Health, Bethesda, Md. Born in New York City. Medical degree: New York Medical College, 1968. Specialty: General Practice.

Jack Durell, M.D. Office: 2141 K Street, N.W. Born in New York City. Medical degree: Yale University, 1953. Specialty: Psychiatry.

Allan A. Hunter, M.D. Office: 1330 New Hampshire Avenue, N.W. Born in Los Angeles, Calif. Medical degree: George Washington University, 1964. Specialty: Ophthalmology.

Joseph D. B. King, M.D. Office: 5410 Connecticut Avenue, N.W. Born in Baltimore, Md. Medical degree: Johns Hopkins University, 1944. Specialty: Internal Medicine.

Stephen K. Kwass, M.D. Office: 5225 Connecticut Avenue, N.W. Born in Brooklyn, N. Y. Medical degree: State University of New York Downstate Medical Center, 1963. Specialty: Psychiatry.

Alfred P. Pavot, M.D. Office: Cafritz Memorial Hospital. Born in Harbin, China. Medical degree: University of Hong Kong, 1957. Specialty: Physical Medicine and Rehabilitation.

Richard C. Reba, M.D. Office: Washington Hospital Center. Born in Milwaukee, Wisc. Medical degree: University of Maryland, 1957. Specialty: Nuclear Medicine.

Janice Y. Robinson, M.D. Office: 3308 14th Street, N.W. Born in Jamaica, West Indies. Medical degree: Howard University, 1953. Specialty: Pediatrics.

William F. Weber, M.D. Office: 2141 K Street, N.W. Born in Falls Church, Va. Medical degree: Yale University, 1962. Specialty: Psychiatry.

Norman L. Wilson, Jr., M.D. Office: 3000 Connecticut Avenue, N.W. Born in Buffalo, N. Y. Medical degree: Harvard Medical School, 1963. Specialty: Psychiatry.

Associate

Richard H. Conant, M.D. Office: 8830 Cameron Court, Silver Spring, Md. Born in Passaic, N. J. Medical degree: State University of New York Upstate Medical Center, 1963. Specialty: Orthopedic Surgery.

OBITUARIES

Stanhope Bayne-Jones, M.D.

(1888–1970)

Dr. Stanhope Bayne-Jones, retired Brigadier General of the Army Medical Corps and former Dean of Yale University Medical School, died, February 20, 1970, at his home, 2330 Massachusetts Avenue, N. W. Dr. Bayne-Jones had relinquished many top medical positions but he had never really retired. He was a Life member of the D. C. Medical Society.

Dr. Bayne-Jones was born in New Orleans, La., November 6, 1888. His father was also a physician. He received his undergraduate degree from Yale University in 1910 and his medical degree from Johns Hopkins University in 1914. He interned a year at Johns Hopkins Hospital, continued as assistant resident of pathology for 2 years, 1915–1917, and earned his Master's degree in 1917.

He held honorary degrees from Yale, University of Rochester (N.Y.), Emory University, and Western Reserve University, and an honorary doctorate in laws from Tulane and Johns Hopkins Universities.

As an Army medical officer during World War I he served in France and Germany with the British and American Expeditionary Forces; he was decorated for his services by the United States, Great Britain, and France.

During his long teaching career Dr. Bayne-Jones was on the faculty of Johns Hopkins University, the University of Rochester, and Yale University, where he was Professor of Bacteriology from 1932 to 1947 and Dean of the School of Medicine from 1935 to 1940.

From 1942 to 1946, during World War II, he was on active duty in the Office of the Surgeon General of the U.S. Army. Among the positions he held were Deputy Chief, Preventive Medicine Service; Administrator of the Army Epidemiological Board; and Director of the U.S.A. Typhus Commission. He retired with the rank of Brigadier General in 1949 but was recommissioned in the same grade in May, 1953. From 1953 to 1956 he was Technical Director of Research, Office of the Surgeon General of the Army. Upon his retirement he received the highest Army civilian award, the Decoration for Exceptional Civilian Service.

At the time of his death Dr. Bayne-Jones was Chairman of the Advisory Editorial Board for the History of Preventive Medicine in World War II, an office he had held since 1955.

His memberships in scientific organizations covered the full range of national and international medical societies and boards. He had served as President of the Society of American Bacteriologists, the American Association of Immunologists, and the American Association of Pathologists and Bacteriologists. He had been a member of the Medical Society of the District of Columbia since 1953 and a Life member since 1965.

STANHOPE BAYNE-JONES, M. D.

He authored more than 75 scientific and medical papers and had served as editor of several scientific journals. He was co-author with Dr. Hans Zinsser of a revised and new edition of "A Textbook of Bacteriology."

He leaves his wife, Mrs. Nannie Smith Bayne-Jones, of the home address, and a sister, Mrs. Ralph Hopkins, of New Orleans.

A Stanhope Bayne-Jones Chair of Medicine has been established at the Johns Hopkins University School of Medicine.

Review of Vasa Praevia—Paulino

(Continued from page 252)

Emergency transfusion with type O-negative blood may prove lifesaving, but one should keep in mind the danger of overtransfusion.[10] There is no specific therapy indicated for the mother.

Vasa praevia is a condition that one should be aware of as a complication of pregnancy, especially in the last trimester of pregnancy. Early recognition need not be overemphasized in improving the fetal mortality rate. A high index of suspicion with the aid of the simple laboratory tests mentioned still proves to be a valuable tool in its management.

I should like to express my gratitude to Dr. William J. Jaffurs, Director of the Department of Pathology, Columbia Hospital for Women, and Dr. John L. Marlow, Program Director at Columbia, for the encouragement and suggestions they have given me, as well as for supplying the photograph, and to Mrs. Nadine E. Danilson, Medical Records Librarian.

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Transvenous Atrial Electrode Catheter—McNamara

(Continued from page 266)

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Vaginal Tablets/Ointment

Formula: CANDEPTIN Vaginal Ointment contains a dispersion of candicidin powder equivalent to 0.6 mg per gm or 0.06% candicidin activity in U.S.P. petrolatum. 3 mg of candicidin is contained in 5 gm. of ointment or one applicatorful. CANDEPTIN Vaginal Tablets contain candicidin powder equivalent to 3 mg (0.3%) candicidin activity dispersed in starch, lactose and magnesium stearate.

Indications: Vaginal moniliasis due to *Candida albicans* and other Candida species.

Contraindications: Patient sensitivity to any of the components. During pregnancy manual tablet insertion may be preferred since the use of the ointment applicator or tablet inserter may be contraindicated

Caution: Clinical reports of sensitization or temporary irritation with CANDEPTIN Vaginal Ointment or Vaginal Tablets have been extremely rare To avoid reinfection, it is recommended that the patient refrain from sexual intercourse during treatment or the husband wear a condom.

Dosage: One vaginal applicatorful of CANDEPTIN Ointment or one Vaginal Tablet is inserted high in the vagina, twice a day, in the morning and at bedtime, for 14 days Treatment may be repeated if symptoms persist or reappear.

Dosage forms: CANDEPTIN Vaginal Ointment is supplied in 75 gm. tubes with applicator (14-day regimen requires 2 tubes). CANDEPTIN Vaginal Tablets are packaged in boxes of 28, in foil, with inserter—enough for a full course of treatment Store under refrigeration.

Federal law prohibits dispensing without prescription CANDEPTIN is a registered trade-mark of Julius Schmid, Inc

References 1 Olsen, J R Journal-Lancet 85 287 (July) 1965. 2. Lechevalier, H Antibiotics Annual 1959-1960. New York, Antibiotica, Inc., 1960, pp 614-618 3 Giorlando, S W., Torres, J. F., and Muscillo, G Am J Obst & Gynec *90* 370 (Oct 1) 1964 4 Friedel, H J. Maryland M. J. *15* 36 (Feb) 1966

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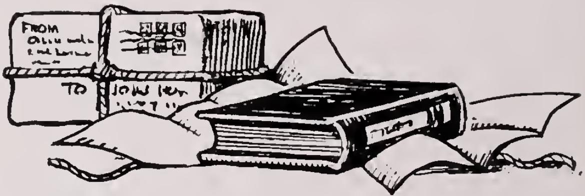

Books Received

Current Diagnosis and Treatment. Henry Brainerd, M.D., Marcus A. Krupp, M.D., Milton J. Chatton, M.D., and Sheldon Margen, M.D. Price, $11.00. Pp. 884. Los Altos, Calif.: Lange, 1970.

The Vitreous in Clinical Ophthalmology. Norman S. Jaffe, M.D., F.A.C.S., F.I.C.S. Price, $32.50. Pp. 310, with 334 illustrations, including 9 in 2 colors and 2 full color plates. St. Louis: Mosby, 1969.

Symposium on Ocular Therapy. Volume IV. Under the auspices of the American Academy of Ophthalmology and Otolaryngology and the Association for Research in Ophthalmology. Edited by Irving H. Leopold, M.D. Price, $14.00. Pp. 145, with 13 illustrations. St. Louis: Mosby, 1969.

Synopsis of Obstetrics, 8th ed. Charles E. McLennan, M.D., with the collaboration of Eugene C. Sandberg, M.D. Price, $9.50. Pp. 496, with 212 illustrations. St. Louis: Mosby, 1970.

Drugs of Choice 1970–1971. Walter Modell, M.D., Editor. Price, $20.50. Pp. 924. St. Louis: Mosby, 1970.

Synopsis of Clinical Cancer, 2nd ed. Condict Moore, M.D. Price, $11.75. Pp. 267, with 37 illustrations. St. Louis: Mosby, 1970.

Handbook of Psychiatry. Edited by Philip Solomon, M.D., and Vernon D. Patch, M.D. Price (paper), $7.00. Pp. 623. Los Altos, Calif.: Lange, 1969.

Symposium on Ocular Pharmacology and Therapeutics. Transactions of the New Orleans Academy of Ophthalmology. Contributors: John Adriani, M.D., Howard N. Bernstein, M.D., Robert P. Burns, M.D., Stephen M. Drance, M.D., Philip P. Ellis, M.D., William H. Havener, M.D., and Kenneth T. Richardson, M.D. Price, $27.50. Pp. 311, with 98 illustrations, including 33 figures on 5 color plates. St. Louis: Mosby, 1970.

Laser Photocoagulation and Retinal Angiography, with Current Concepts in Retinal and Choroidal Diseases. H. Christian Zweng, M.D., Hunter L. Little, M.D., and Robert R. Peabody, M.D. Price, $26.50. Pp. 297, with 283 illustrations and 3 color plates. St. Louis: Mosby, 1969.

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May 25–30: American Association on Mental Deficiency. Sheraton-Park Hotel, Washington. Address: Dr. John J. Noone, Executive Secretary, 5201 Connecticut Ave., N.W., Washington, D.C. 20015.

May 27–29: The American College of Physicians and American Heart Association: Postgraduate Course on Heart Disease, Clinical and Pathological Correlations. Georgetown University Medical Center, Washington. Registration fees: members, $60; nonmembers, $100. Address: Dr. Edward C. Rosenow, Jr., Executive Director, ACP, 4200 Pine Street, Philadelphia, Pa. 19104.

May 28–30: American Ophthalmological Society. The Homestead, Hot Springs, Va. Address: Dr. Samuel D. McPherson, Jr., Secretary, 1110 West Main Street, Durham, N.C. 27701.

June 13–14: American Diabetes Association. Stouffer's Riverfront Inn, St. Louis. Address: Mr. J. Richard Connelly, Executive Director, 18 East 48th Street, New York, N. Y. 10017.

June 15–17: American Neurological Association. Sheraton-Deauville Hotel, Atlantic City, N. J. Address: Dr. Samuel A. Trufant, Secretary-Treasurer, Cincinnati General Hospital, Cincinnati, Ohio 45229.

June 17–21: American Therapeutic Society. Continental Plaza Hotel, Chicago. Address: Dr. Richard T. Smith, Secretary-Treasurer, 37 Narbrook Park, Narberth, Pa. 19072.

June 18–19: American Rheumatism Association. Hotel Statler-Hilton, Detroit. Address: Miss Margaret M. Walsh, Executive Secretary, The Arthritis Foundation, 1212 Avenue of the Americas, New York, N. Y. 10036.

June 19–21: Interim Session, American Medical Women's Association. Knickerbocker Hotel, Chicago. Address: Mrs. Gertrude F. Conroy, Executive Director, 1740 Broadway, New York, N. Y. 10019.

June 21–25: Annual Convention, American Medical Association. Chicago. Address: Dr. Ernest B. Howard, Executive Vice President, 535 North Dearborn Street, Chicago, Ill. 60610.

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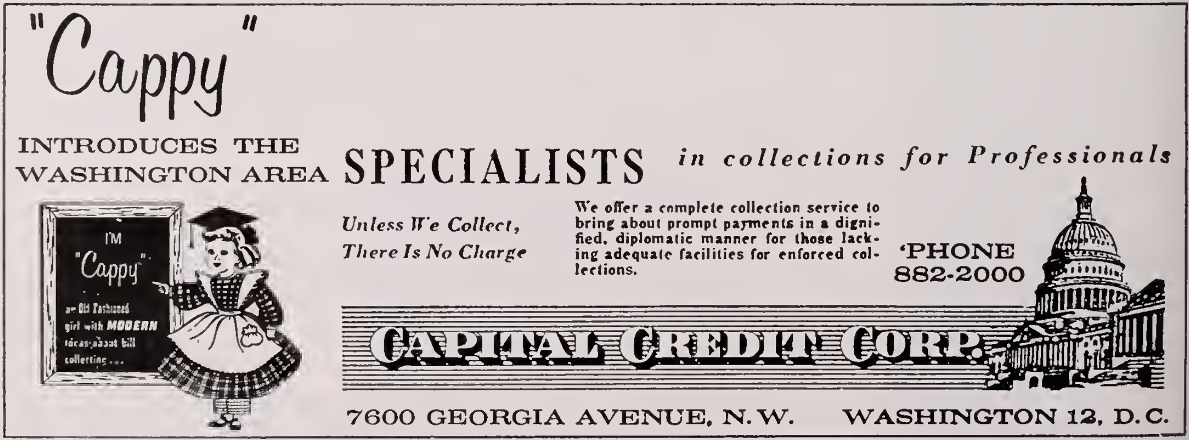
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General Adverse Effects: Because of the high potency of the drug and the variability of its potential to cause adverse reactions, the following are strongly recommended: 1) the lowest possible effective dose for the individual patient should be prescribed. Increased dosage tends to increase adverse effects, particularly in doses over 150-200 mg/day, without corresponding clinical benefits; and 2) careful instructions to, and observations of, the individual patients are essential to the prevention of serious and irreversible, including fatal, adverse reactions, especially in the aging patient.

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Contraindications: Children 14 years of age and under; pregnant women and nursing mothers; active gastrointestinal lesions or history of recurrent gastrointestinal lesions; allergy to aspirin and indomethacin.

Warnings: *Gastrointestinal Effects:* Because of the occurrence and, at times, severity of gastrointestinal reactions, be continuously alert for any sign or symptom signaling a possible gastrointestinal reaction. The risks of continuing therapy with INDOCIN in the face of such symptoms must be weighed against the possible benefits to the individual patient. Gastrointestinal effects may be reduced by giving the drug immediately after meals, with food, or with antacids. Use greater care in aging patients.
Ocular Effects: Corneal deposits and retinal disturbances, including those of the macula, have been observed in some patients on prolonged therapy. Discontinue therapy if such changes are observed. Ophthalmologic examination at periodic intervals is desirable in patients on prolonged therapy.
Central Nervous System Effects: INDOCIN (Indomethacin, MSD) may aggravate psychiatric disturbances, epilepsy, and parkinsonism, and should be used with considerable caution in patients with these conditions. If severe CNS reactions develop, discontinue the drug.

Precautions: Blurred vision may be a significant symptom that warrants a thorough ophthalmologic examination. Patients should be cautioned about engaging in activities requiring mental alertness and motor coordination, as driving a car. Headache which persists despite dosage reduction requires complete cessation of the drug. May mask the usual signs and symptoms of infection; therefore, the physician must be continually on the alert for this and should use the drug with extra care in the presence of existing controlled infection. After the acute phase of the disease is under control, an attempt to reduce the daily dose should be made repeatedly until the patient is off entirely.

Adverse Reactions: *Gastrointestinal Reactions:* Single or multiple ulcerations of the esophagus, stomach, duodenum, or small intestine, including perforation and hemorrhage, with fatalities in some instances; gastrointestinal bleeding without obvious ulcer formation; perforation of preexisting sigmoid lesions (diverticulum, carcinoma, etc.); rarely, increased abdominal pain in ulcerative colitis patients or development of ulcerative colitis and regional ileitis; gastritis, which may persist after the cessation of the drug; nausea, vomiting, anorexia, epigastric distress, abdominal pain, and diarrhea.
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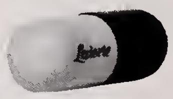

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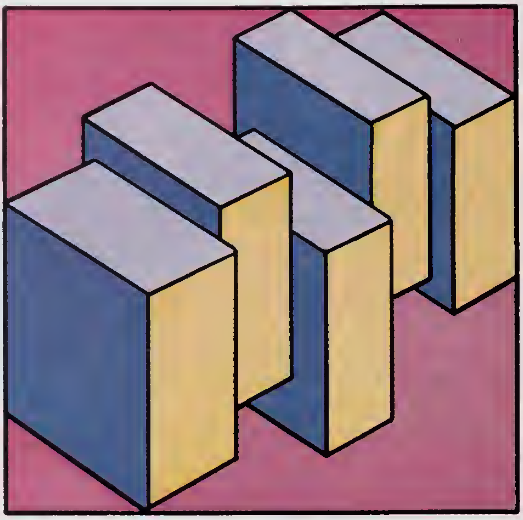

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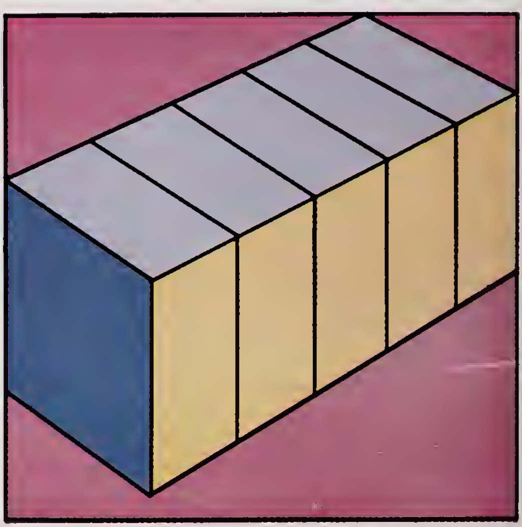

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William E. Braun, M.D.

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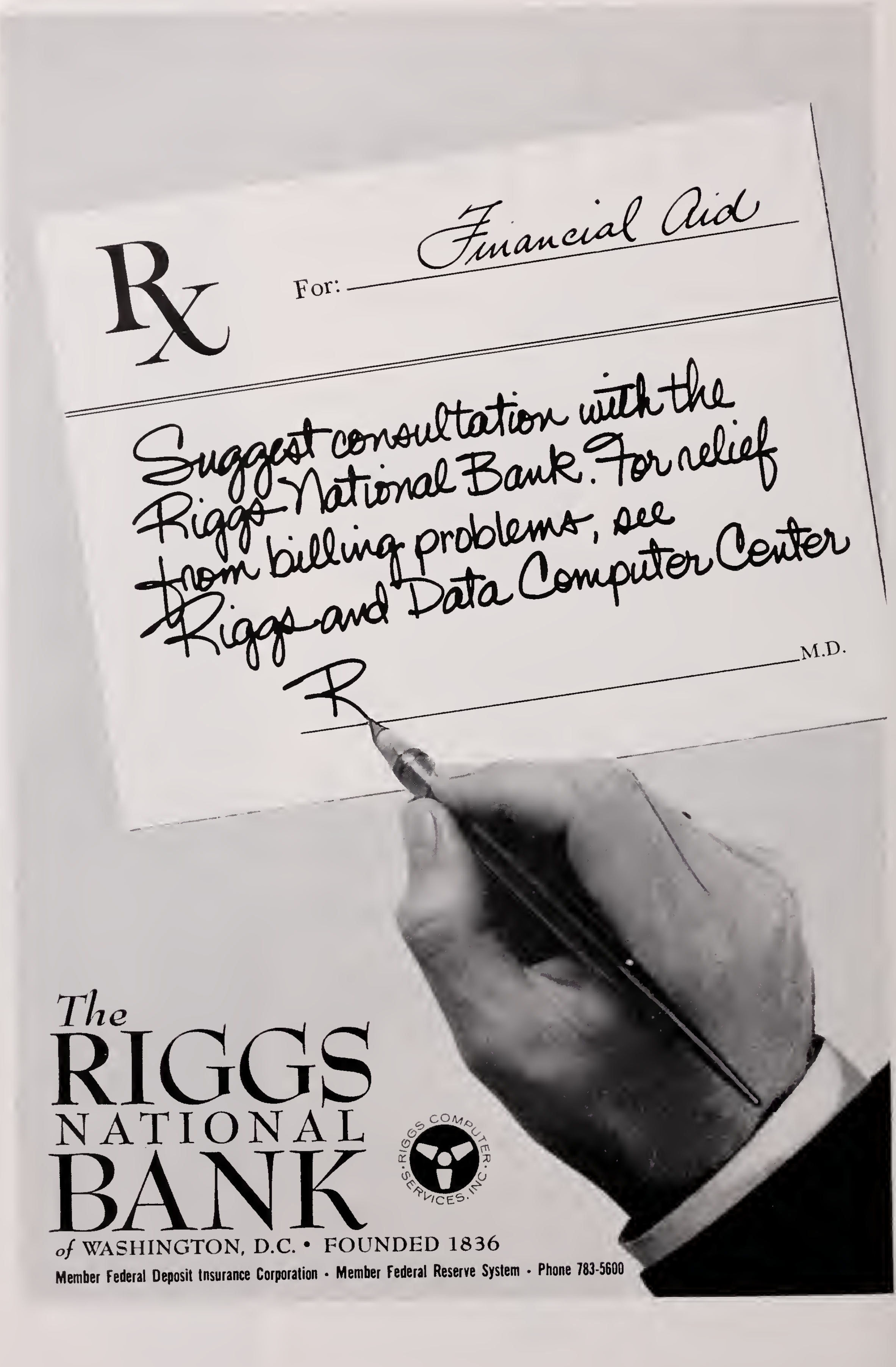

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Yearly Subscription, $8.00
Single Number, 75¢

Second-class postage paid at Baltimore, Md.
Published monthly at
Mount Royal and Guilford Avenues,
Baltimore, Maryland 21202

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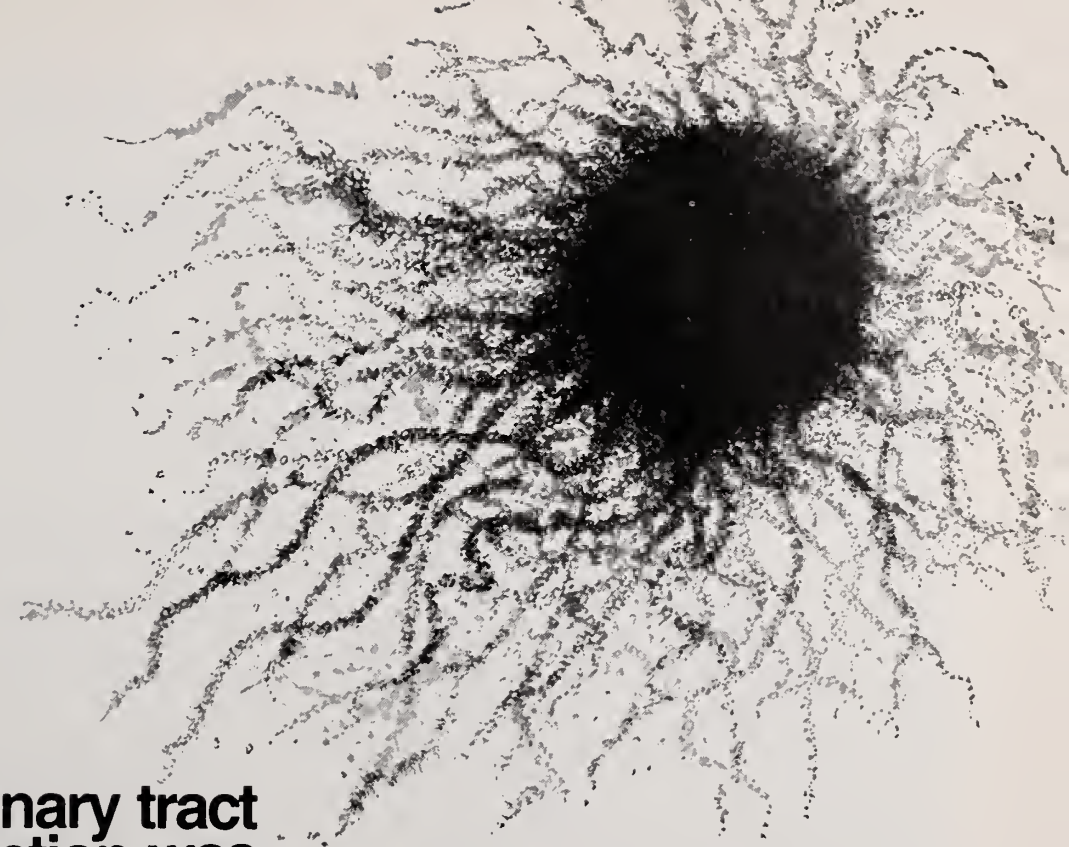

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Human Renal Transplantation: Current Status and Prognosis*†

WILLIAM E. BRAUN, M.D.‡

WITH APPROXIMATELY 3,000 renal transplants having been performed throughout the world, some notable clinical milestones have been reached. The longest surviving transplant recipient from a monozygotic twin has had excellent renal function for over 13 years. Despite a ruptured uterus with her third pregnancy this patient sustained no damage to the transplant. From a dizygotic twin the longest surviving transplant is in its tenth year, although in the eighth year some impairment of renal function developed. This extension of life permitted the patient to obtain a Ph.D. degree and a university teaching position. Among recipients of renal transplants from nonidentical siblings or parents, there are now some functioning for more than 7 years. A smaller group of patients with transplants from cadaveric donors has also passed this point. The enthusiastic probings of the renal transplant technique have met with better-than-expected results in patients having such associated diseases as juvenile diabetes, free aortic insufficiency from bacterial endocarditis, and generalized arteriosclerosis in an 82-year-old man.

The trend of 1-year allograft survivors has been a favorable one both for recipients of living-related and cadaveric kidneys with recent results in these groups of 80 and 42 per cent respectively (figures 1 and 2).[1]

One might assume from this progress that basic questions in transplantation immunology had been answered and that highly effective ways of either preventing or treating allograft rejection were in use. This, however, is not the case. Probably the major factors contributing to the improvement in both patient and allograft survival have been medical and dialysis therapy before and after transplant, more delicate removal of the donor kidney with better preservation of ureteral blood supply, and the management of urologic and infectious complications.

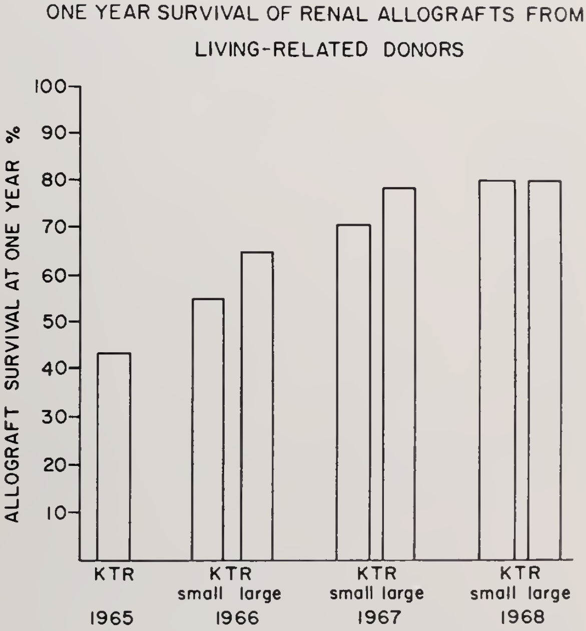

FIG. 1. Data provided by the Kidney Transplant Registry (KTR) show continued improvement in the 1-year survival of renal allografts from living-related donors, with a current survival of 80 per cent. Transplantation centers contributing information to the KTR were classified as small in 1966 if they had performed fewer than 10 transplants and large if they had performed more than that number. The division into small and large centers in 1967 and 1968 was based on the cumulative performance of fewer or more than 30 transplants, respectively.

---

* This work was supported by Contract PH 43-68-1298 from the Public Health Service, United States Department of Health, Education, and Welfare.

† Submitted for publication in the Georgetown University Medical Center Number of the MEDICAL ANNALS (February 1970), which was dedicated to Dr. W. Proctor Harvey, but not included because of limited space.

‡ Formerly Fellow in Cardiology in the Division of Cardiology, Georgetown University Hospital, under the direction of Dr. Harvey. Present address: Director, Histocompatibility Testing Laboratory, Division of Research, Cleveland Clinic Foundation, Cleveland, Ohio 44106.

Patients who survive the loss of a renal allograft, whether they return to a dialysis program or receive another allograft, have a worse prognosis than patients who are on an uninterrupted chronic dialysis program or who are receiving their first allograft. The 1-year mortality of patients who return to dialysis after the loss of an allograft is twice that of other patients on chronic dialysis programs.[2] For patients receiving a second renal transplant the incidence of immediate allograft failures rises sharply from 6 to 42 per cent.[3] Such unfavorable changes in survival and successful retransplantation have imposed a significant limitation on recent trends of improvement. It is necessary to use every means to insure success of the first allograft while assuring the safety of the patient. The ways in which this effort has been undertaken and possibly will be directed in the future form the basis for this report and for the status and prognosis of renal allotransplantation.

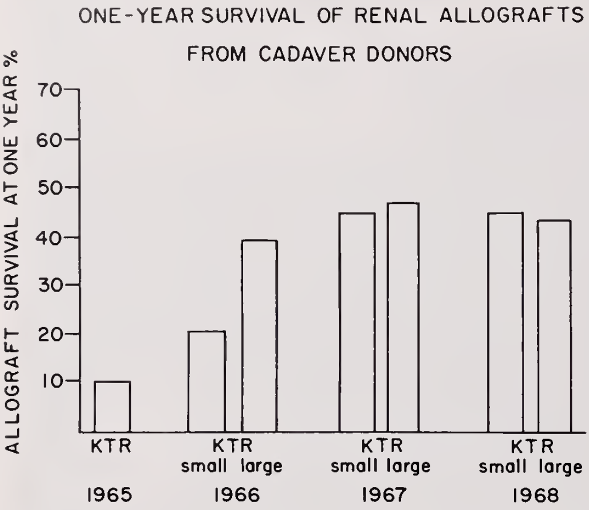

FIG. 2. Kidney Transplant Registry (KTR) data show an improvement since 1965 in 1-year survival of renal allografts from cadaver donors, with a current survival of 42 per cent. However, there has been a relative plateauing of results at large centers in the last 3 years. Transplantation centers contributing information to the KTR were classified as small in 1966 if they had performed fewer than 10 transplants and large if they had performed more than that number. The division into small and large centers in 1967 and 1968 was based on the cumulative performance of fewer or more than 30 transplants, respectively.

Histocompatibility Testing

Both erythrocyte and leukocyte antigens have been shown to influence allograft survival. Of the numerous erythrocyte blood-group systems only ABO incompatibilities have clearly been shown to have a detrimental effect on allograft survival.[4] Although an incompatibility of the P blood-group system was a statistically significant factor in shortening the survival of skin grafts in Ceppillini's study,[5] the most recent renal allograft results fail to confirm its significance.

The studies of Medawar[6] in 1946, showing that pre-immunization with leukocytes caused accelerated skin-graft rejection, and that of Dausset[7] in 1952 describing leukocyte antibodies were fundamental to the development of histocompatibility testing. Stimulated by its application to human organ transplantation, subsequent work led to the description of the HL-A locus as the major histocompatibility locus in man. The HL-A locus in man is believed to consist of 2 subloci, the LA and the 4 sublocus.[8, 9] More than 13 antigens in these 2 subloci are currently defined sufficiently to permit their use in matching donor and recipient pairs for transplantation. Matched patients are those with no donor antigen mismatched but a variable number of recipient antigens mismatched. Mismatched patients have at least 1 donor antigen as well as a variable number of recipient antigens mismatched.

Using the very reproducible microdroplet lymphocyte cytotoxicity technique for detecting HL-A histocompatibility antigens, Terasaki[10] has shown significantly better allograft survival and function in matched as opposed to mismatched kidney recipients. In matched sibling-sibling transplants the 4-year allograft survival was 92 per cent compared to 43 per cent for those who were mismatched ($p < 0.001$).[11] Transplants from matched parent or unrelated donors showed significantly better renal function and clinical grade than did mismatched recipients in these respective groups.[11, 12]

However, 2 groups of patients were found whose allograft function and histocompatibility matching did not correlate, viz., mismatched patients whose allografts functioned well and matched patients whose allografts failed. These discrepancies between histocompatibility testing and renal allograft survival may have been attributable to several major factors: (1) qualitative or quantitative differences in strength of histocompatibility antigens, (2) effects of antigenic combinations, (3) inadequacies of leukocyte typing sera for detecting HL-A histocompatibility antigens, (4) possible existence of histocompatibility loci other than the HL-A locus, and (5) differences in host response to the same histocompatibility antigens. More than one of these factors may be operating at the same time as indicated by recent investigations suggesting that kidney cells have a more dense representation of certain HL-A antigens and possibly unique tissue antigens not part of the HL-A system.

By means of defined leukocyte antisera capable of detecting 13 HL-A histocompatibility antigens and thus minimizing the third factor, a recent study of renal allograft recipients with living-related donors disclosed significant differences in the strength of histocompatibility antigens when considered according to their subloci.[13] Histocompatibility antigens mismatched exclusively in the LA sublocus were found in 5 of 8 allografts failing within the first year. In contrast, of 5 allograft recipients having excellent renal function for 17 to 71 months (mean 48.8 months) despite mismatched antigens, 4 had a mismatch in both the LA and the 4 sublocus, 1 at only the 4 sublocus, and none exclusively in the LA sublocus ($p<0.03$). Furthermore, the ratio of mismatched to matched 4 sublocus antigens was greater in the latter group ($p<0.05$), suggesting that the 4 sublocus antigens were weaker. Dausset[9] also has reported a stronger effect of LA sublocus antigens in shortening skin-allograft survival.

Despite indications that there are stronger and weaker groups of histocompatibility antigens, at times the same antigen may appear strong in one recipient and weak in another, thus indicating the importance of assessing the immunologic responsiveness of each recipient to his specific donor's cells. The 1-way mixed lymphocyte culture (MLC) developed by Bach does this.[14] Treatment of 1 set of cells used in the mixed culture with mitomycin-C prevents them from responding to the other set of cells but leaves intact their ability to stimulate them. Stimulation measured by the uptake of tritiated thymidine indicates a response to foreign histocompatibility antigens. Thus, in identical twins the recipient's cells are not stimulated by mitomycin-treated donor's cells, whereas in histoincompatible pairs they are stimulated. Currently, this is the only test which gives a physiologic indication of how the transplant recipient will respond to his specific donor's cells. Its use in parallel with tissue-typing methods has begun to explain some of the discrepancies seen with the latter technique. With the time required for MLC now reduced from 7 to 3 days, this technique is approaching the point at which it can be used even for cadaveric kidney donors whose organs are presently able to be preserved in vitro for approximately half that time.

Perhaps the most dramatic contribution of tissue-typing is the finding that 80 per cent of renal transplants performed in recipients who have preformed antibody to their donor's cells never function.[3] This has been called the "hyperacute rejection."[15] The histologic lesion in these allografts is that of diffuse intravascular coagulation resembling the generalized Shwartzman phenomenon,[16, 17] although it is not always associated with a demonstrable systemic consumption coagulopathy.[18] The development of preformed antibodies in these patients is due primarily to leukocyte-rich histoincompatible blood transfusions and previously rejected allografts. Women may also develop them from exposure to histoincompatible leukocytes during pregnancy.

The number of patients with such preformed antibodies is increasing. It is important in patients who are prospective renal-transplant recipients, even at a far distant time, to consider several approaches to prevent blood transfusions from further contributing to this problem of presensitization: (1) Avoid transfusions except in absolute necessity, (2) render blood leukocyte-free, and (3) give only HL-A histocompatible blood. Chronic hemodialysis, which is almost a universal preparative stage for transplantation, presents an occasion and sometimes a cause for repeated blood transfusions. However, evidence to show that increased erythropoiesis could take place in well-dialyzed, nontransfused patients with renal failure has moderated the need for repeated transfusions. In addition, improvement in equipment and recovery techniques for hemodialysis has resulted in the elimination of exogenous blood priming and in minimal blood loss in the course of dialysis.

What is now appearing as a prominent cause for the development of preformed antibodies is the rejection of a previous allograft. It has become clear, too, that a histoincompatible transplant, even without rejection as the primary cause of its failure, can presensitize the recipient and make the search for a compatible donor sometimes long and difficult. Once produced, the antibodies may persist for months and perhaps years. Immunosuppressive drugs have been unsuccessful in eliminating them. Even if the antibody titer falls below detectable levels, reimmunization with the same antigen on another allograft would result in an accentuated antibody response and probable allograft failure. Fortunately, even in patients demonstrating preformed antibodies to a high percentage of lymphocytes from a random population, successful allografts can result if no antibody exists to their specific donor.[19]

An indirect contribution of tissue typing to transplantation has been in stimulating coöperative efforts to obtain better matching in unrelated donor-recipient pairs. Eurotransplant,[20] the Los Angeles[21] and the London coöperative plans[22] have shown that better matched kidneys from cadaveric donors can be found by considering all potential recipients as a single pool for each cadaveric organ that is salvaged. Similar programs are now functioning in the Northeastern Ohio area and in the Southeastern United States. Evolving with this effort have been promising methods for organ preservation capable of maintaining a kidney for approximately 24 to 30 hours in a viable condition for transplantation.[23, 24]

Allograft Rejection

Since foreign antigen initiates allograft rejection, an important question is precisely where in the renal allograft donor antigen resides. Vascular endothelium was proposed as the most probable site, but Schwartz's study in dogs with sex-chromatin marking of the donor blood vessel showed that vascular allografts were certainly not strongly antigenic.[25] The most stimulating investigations on this point are those of Steinmuller[26] and of Elkins and Guttmann.[27] Steinmuller, using a skin isograft model in inbred mice, and Elkins and Guttmann, using a local graft-versus-host model in rat renal allografts, concluded that passenger donor lymphocytes in the graft were responsible for initiating rejection. Additional support for this came from another of Guttmann's studies in which treatment of only the rat kidney donor with antilymphocyte serum significantly modified allograft rejection.[28] These animal experiments have generated studies now under way to modify the antigenicity of the allograft by eliminating passenger lymphocytes without directing that therapy against any essential portion of the kidney and without exposing donor or recipient to drug therapy. However, recent studies in our laboratory have shown that HL-A antigens are contained in the cellular portion of the human renal glomerulus to an extent that a single human renal glomerulus is the equivalent of approximately 1,000 peripheral lymphocytes. This means that any method of modifying the antigenicity of the graft would have to modify these sites also.

Although allograft rejection is a classic example of delayed hypersensitivity, humoral mechanisms have been involved in 2 dramatic forms of allograft injury. The first is that due to antiglomerular basement membrane antibody (anti-GBM Ab). In a patient with rapid progression of glomerulonephritis (from onset to end-stage in less than 1 year) the findings of a linear fluorescent pattern of IgG on the glomeruli in the original kidneys, the subsequent development of circulating anti-GBM Ab after removal of the original kidneys, and the occurrence of early proteinuria and linear fluorescent deposits of IgG in the allograft constitute strong evidence that the original kidneys and the allograft were damaged by anti-GBM Ab.[29] Injection into monkeys of antibody eluted from the original kidneys or of serum globulin containing anti-GBM Ab has resulted in a reproduction of the proteinuria and of glomerulonephritis with the same linear fluorescent IgG deposits seen in both the original kidneys and the allograft. While the original kidneys reside in the host circulating anti-GBM Ab is rarely detectable. After the nephrectomies a small percentage of these patients do demonstrate such antibodies, but at present this is not a satisfactory screening method. When this group of findings is present in a patient ready for transplantation a longer duration of hemodialysis with immunosuppressive therapy may be helpful in avoiding early allograft damage.

Patients with Goodpasture's syndrome, in which fluorescent linear deposits of IgG are characteristically seen on the glomeruli, and those with glomerulonephritis with similar fluorescent deposits should be considered for such management before transplantation. The lesion due to anti-GBM Ab may be of relatively short duration in the allograft and without permanent effect on renal function. A follow-up study at 3 years of one of the original patients in whom renal function was not impaired during the period of heavy proteinuria, and in whom the level of proteinuria had returned to normal by 6 months, revealed that there still was excellent renal function, minimal proteinuria, and no hypertension. The similarities between the pathogenesis of this lesion and that caused by heterologous anti-GBM Ab in nephrotoxic serum nephritis and by autologous anti-GBM Ab in auto-immune nephritis in sheep have provided a solid link between experimental and clinical renal disease.

The second humoral mechanism of allograft injury is that referred to earlier as "hyperacute rejection." The antibody here is directed against histocompatibility antigens present in the allograft and lacking in the recipient. These antibodies can almost always be detected by testing in a cytotoxic assay the recipient's serum against donor lymphocytes. Transplantation performed in the presence of such preformed antibody has an 80 per cent incidence of immediate failure and is therefore contraindicated.[3] The cause of failure is diffuse intravascular coagulation resembling a generalized Shwartzman reaction.[15, 17] The observation that, unlike the generalized Shwartzman reaction, clotting is usually confined to the kidney[18, 30] focuses attention on intrarenal mechanisms responsible for thrombosis and on the coagulation system acting as another immunologic mechanism of tissue injury. The interweaving of these 2 systems may occur between Hageman factor or plasmin and complement, a finding first described by Pillemer[31] in 1953.

Throughout the spectrum of allograft rejection there is evidence of involvement of the clotting system. In acute rejections fibrin degradation products are excreted in the urine.[32] In the most enigmatic form of rejection, the chronic form, dense glomerular deposits of fibrin degradation products are found.[32] The ability of anticoagulants to modify these various forms of rejection is currently being investigated.

The diagnosis of allograft rejection is critical and difficult. Early treatment may reverse what later treatment cannot. But treatment of a mistaken rejection presents a severe risk for the patient because of the numerous complications of massive immunosuppressive therapy, particularly fatal infections. In addition, there is delay in appropriate treatment for the real problem such as ureteral obstruction or leakage, vascular thrombosis, or perinephric abscess or hematoma. At present the diagnosis is based on the sudden deterioration of renal function and exclusion of the other possibilities mentioned above without direct evidence, short of biopsy, that a rejection is occurring. The urinary excretion of fibrin fragments,[32] decreases in urine protein selectivity,[33] lysozymuria,[34] unstable serum complement levels and increased catabolism of C′3 and C′4,[35] and decreased renal cortical blood flow[36] have been shown to accompany rejection, but none is suitable to, or has had general application. Consequently, allograft rejection is usually an overworked diagnosis that carries serious consequences whenever erroneously made. There is still an urgent need for a simple, reliable, and specific test for allograft rejection.

Immunosuppression

The most notable work in this area has centered on the use of antilymphocyte serum (ALS) or globulin (ALG) in human allotransplantation. Originally described by Metchnikoff 70 years ago, ALS attracted intense interest after Woodruff and Anderson[37] in 1963 showed that in combination with thoracic-duct drainage ALS greatly prolonged rat-skin allografts.

Produced by immunizing one species, usually rabbits or horses, with lymphoid cells from another species (mouse, rat, dog, or man) this material arrived for clinical trials in 1966 with strong experimental evidence for its immunosuppressive capability.[37–40] The encouraging clinical results of Starzl[41] triggered widespread nonuniform production and use of this substance in human renal allografts. Since that report, however, there has been little further clinical confirmation of the effectiveness of ALG. In fact, some of the best results in human renal transplantation have been obtained by investigators not using ALG. In his personal series of 61 cases not receiving ALG Kountz[42] reported a 93 per cent allograft survival in the 33 patients transplanted at least 1 year before with a kidney from a living-related donor. In 2 other series with living-related donors an 80 per cent 1-year allograft survival was obtained before starting to use ALG.[43, 44] One of these groups has experienced a reduced allograft survival since its addition, although no clearly defined role of ALG was apparent. In the cadaver-donor series of the Cleveland Clinic the 1-year survival in 1965 of 46 per cent for 48 patients has not been equaled there during the past 2 years of ALG usage. It would appear that the efficacy of ALG therapy as it has been used in human renal allografts lacks proof.

There is general agreement that ALG acts on peripheral lymphocytes belonging to the long-lived, thymus-dependent pool. Several theories have been proposed for its mechanism of action: (1) selective depletion of lymphocytes by a cytotoxic effect, (2) "blindfolding" or coating of lymphocytes to render them incapable of recognizing antigen, (3) sterile or nonspecific activation of lymphocytes so that, already committed, they cannot respond to a new antigen, (4) antigen competition whereby the lymphocyte response is directed against the ALG itself and is no longer available for response to a new antigen, and (5) activation of the complement system with alteration of lymphocytes in an as yet undefined manner.[45]

From the number of theories it is obvious that none is entirely satisfactory. ALG's involvement of the complement system and its suppression of an immune-complex-induced lesion along with the polymorphonuclear-cell infiltrate has exposed further the multiplicity of actions of ALG and the heterogeneity of the antibodies in it.[46] This latter point is more apparent in the ALG made for clinical use. Until the recent use of cultured lymphoblasts as the source of antigen, a commonly used antigen, spleen cells, contaminated with red blood cells, platelets, and other tissue materials, resulted in the formation of antibodies to these substances too. These extraneous antibodies could not always be completely removed before use.

The lack of a suitable assay of potency has been a further hindrance to evaluating ALG. The opsonizing property of ALG has correlated better with immunosuppressive activity than the cytotoxic, agglutinating, or mitogenic capacity.[47] ALG's inhibition of rosette formation by sheep red blood cells and lymphocytes making anti-sheep red blood cell antibodies has shown promise in Bach's laboratory.[48] The most critical test is Balner's assay of skin-graft survival in ALG-treated primates.[49] Hopefully, a central facility would provide individual producers with assays of their sera's potency by this method. The present lack of a generally available and meaningful assay system has, inappropriately, made the human renal allograft itself the index of immunosuppression.

Other significant problems are associated with ALG. Pyrogenic reactions are frequent enough to cause diagnostic difficulties in identifying the cause of post-transplant fevers. Injections of ALG are quite painful regardless of whether the preparation of the globulin fraction was by ammonium-sulfate precipitation or ion-exchange chromatography. Since horse serum is the source of ALG for human use, a not uncommon occurrence has been anaphylactoid and hypersensitivity reactions. The use of ALG with other immunosuppressive drugs has been associated with 7 reported cases of lymphoreticular malignancies.[50] The most striking instance was the development of a reticulum-cell sarcoma at the site of ALG injection.[51] Experimental evidence[52] demonstrating increased susceptibility to certain infections when ALG was used combined with the fact that infections, including many caused by rare organisms, are still the leading cause of mortality in renal allograft recipients forces a continual balancing of risks in using this agent.

Two recent changes have occurred in administering ALG. Both animal and human studies have shown that in ALG recipients antihorse gamma globulin antibodies develop to it which cause its rapid, immune elimination and, presumably, terminate its effectiveness.[53] In order to avoid antibody formation and prolong the duration of ALG in the circulation the induction of tolerance to horse IgG is being tried in a few centers. These same centers have also been administering purified ALG intravenously in order to achieve higher dosage levels and eliminate painful injections. Once again this advantage brings a new risk since it was with precisely this mode of administration that a complex-induced nephritis was produced in inbred strains of rats used for renal allotransplantation.[54]

With the problems just enumerated in the use of ALG and the well-known hazards and nonspecificity of prednisone and azathioprine, there is a critical need for a potent, specific method of immunosuppression. The isolation of histocompatibility antigens in a highly purified form that would permit the induction of tolerance to these antigens offers the most exciting approach to immunosuppression.[55, 56]

Heart Transplantation

Because of the occasion for which these papers are presented, it seems appropriate to conclude with a few comments on human cardiac allotransplantation.

Experience gained in approximately 156 cardiac allografts with a 1-year survival of 10 per cent has shown that histocompatibility testing may improve these results by selecting better donor-recipient pairs for future heart allografts. This development occurred primarily because of the results seen in 47 cardiac allograft recipients studied by Terasaki.[57, 58] Of these 47 recipients 41 were mismatched for 1 or more donor histocompatibility antigens. At the time of the report 50 per cent (3/6) of matched patients, 40 per cent (8/20) of patients mismatched for 1 group, and only 24 per cent (5/21) of patients mismatched for 2 or more groups were alive. Unfortunately, the correlation with rejection-induced loss of the allograft could not be dissected out of the complex clinical course of these patients.

A notable feature in potential heart recipients is the low incidence of preformed antibodies (4.3 per cent) compared to that seen in potential recipients of kidneys (19.2 per cent) or livers (11.5 per cent).[57] This difference implies that fewer hyperacute rejections will occur in cardiac recipients and is probably related to the lower transfusion requirements of cardiac patients.

Although it was originally thought that the antigenicity of the heart and therefore its susceptibility to rejection would be significantly less than that of the kidney, it has become clear that both organs are rejected in a similar fashion. Schroeder et al[59] have described as the early findings in cardiac allograft rejection, which occur before signs of low cardiac output, (a) a decrease in QRS amplitude, (b) a shift of the electrical axis to the right, (c) an early diastolic right-ventricular gallop, (d) increased posterior-wall thickness, right-ventricular diameter, and overall heart dimensions as determined by ultrasound and confirmed by X-rays, and (e) prominent a- and v-waves in the venous pulse and a rapid y descent resembling a restrictive lesion. These findings may be explained by the histologic changes of interstitial edema, monocytic cellular infiltration, vascular engorgement with thrombosis, and rupture which have been seen in rejected canine cardiac allografts.[60] In the absence of pulmonary hypertension, however, the reason that the right ventricle exhibits the earliest changes is not clear, although it may be related to the more limited reserve of the thin right-ventricular wall when affected by interstitial edema and cellular infiltration.

Just as in renal transplantation, one must search for other treatable causes of organ failure, especially since the high-dosage levels of immunosuppressive drugs used for rejection carry such a great risk by themselves. The perpetual invocation of rejection as the cause of impaired cardiac function has resulted at times in failure to consider or treat its true cause, such as pulmonary emboli. With such heavy reliance on the decrease in QRS voltage for the diagnosis of rejection, attention must be given to such apparent trivia as insuring the same standardization and placement of leads on sequential tracings. Further difficulty in evaluating QRS voltage as an indication of rejection is caused by the pleuropericardial effusions developing during the first few weeks after transplantation, a point usually resolvable with an epicardial ECG.[61]

Some of the most interesting information derived from cardiac allografts is that related to the function of the denervated human heart. In response to submaximal stress the transplanted heart can augment its output, although it does so almost entirely by increasing stroke volume and thereby expending a reserve mechanism of increasing diastolic fiber length.[62, 63, 64] This overdependence on the Frank-Starling mechanism and, as implied, the absence of cardiac innervation have persisted for at least 1 year.[64] Why the return of cardiac innervation is so slow when compared to that in renal allografts is puzzling. In renal allografts axonal regeneration distal to the vascular anastomosis has been seen as early as 27 days and appeared complete by 6 months.[65] Despite physiologic evidence that the transplanted heart performs as though still denervated for at least a year, Lower et al[66] demonstrated that at 3 months sympathetic-nerve regeneration was detectable both by response to stellate ganglion stimulation and fluorescent staining techniques. It may be, then, that although nerve regeneration has occurred, it has a severely impaired functional capacity. Such a persistent functional failure does not augur well for prolonged allograft competenee. Studies of patients who succumbed after 1 year of cardiac transplantation may provide data on the extent of cardiac re-innervation and perhaps suggest from morphology the cause for impaired neural transmission. Also intriguing is why the denervated heart has not shown an increased sensitivity to catecholamines as classically demonstrated in other denervated organs.

Perhaps the most difficult questions of all, however, focus on the criteria for selection of donor and recipient. These have not been resolved in either medical or moral terms. Recently, the Fifth Bethesda Conference of the American College of Cardiology agreed on certain guidelines for recipient selection.[67] Patients for consideration of heart transplantation should fulfill the following criteria: have far-advanced and irreversible heart disease for which there is no effective medical or other surgical treatment; have no permanent damage to other vital organs; freely express a desire to have the operation, and be capable of understanding its hazards, implications, and possible consequences. Despite the broad room for interpretation of these guidelines, the stipulation that no effective medical treatment exists for these conditions ought to convey the message that meticulous and masterly medical treatment should be more widely taught researched, supported, and practiced before any further large-scale attempt is made at cardiac transplantation.

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Partial Orthotopic Liver Transplantation

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WITHIN THE LAST DECADE there has been a growing advancement in liver surgery, aided in large measure by newer anatomic and physiologic principles and departing from the old method of massive ligature, "cut, pack and run" technique, in favor of more precise anatomic dissection.

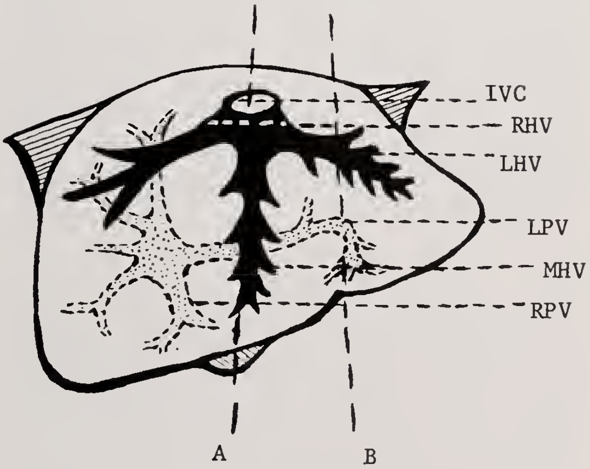
Prompted by the sheer frustration of an impotent surgeon when faced with a massive tear of the liver with uncontrollable bleeding, we embarked on an investigative study of the liver in the anatomy and physiology laboratory, hopefully to be safely applied clinically where there are indications for hepatectomy and, eventually, liver transplantation.

Various investigators such as Starzl et al[1] have transplanted the liver in toto orthotopically. However, we proposed experimentally to effect partial liver transplant orthotopically, with the view in mind that, if there were rejection of the donor's organ, there would still be a remnant lobe or segment which might regenerate to the point of continuing its function, even after rejection of the recipient's, while the donor's liver continued to carry on its functional activity.

Anatomy

Embryologically the liver originates as a diverticulum from the ventral portion of the gut located in that region, subsequently becoming the descending duodenum. The diverticulum, lined by endoderm, grows upward and forward into the septum transversum giving off 2 buds forming the right and left lobes. The gallbladder and common ductal systems are formed from the original diverticulum.

As far as the topographical division of the right and left lobes is concerned there is a discrepancy between the newer and older concept. The newer viewpoint, borne out by dissection, states that the right lobe is separated from the left by a line drawn from the gallbladder fossa anteriorly to the middle of the depression formed by the inferior vena cava (figure 1). The older and familiar thought states that the falciform ligament arising from the umbilical fissure divides right from left. In actuality, this fissure divides the medial from the lateral segment of the left lobe (figure 1).



IVC—inferior vena cava
RHV—right hepatic vein
LHV—left hepatic vein
LPV—left portal vein
MHV—middle hepatic vein
RPV—right portal vein

FIG. 1. Demonstration of right, middle and left hepatic veins draining into the inferior vena cava (dark shade). Note relationship of line A to the middle hepatic vein, representing also the line dividing right from left lobe. The right and left portal veins are shown traversing the hepatic veins at right angles.

The portal vein divides deep in the porta hepatis to form a "T," the left main branch being consistently longer than the right. The left portal branch runs laterally, then curves anteriorly at near right angle to line up parallel to the umbilical fissure, giving off medial and lateral segmental branches. The right portal vein varies from 0 to 3 cm. in length, giving off anterior and posterior segmental branches in "T" formation, the anterior segment comprising most of the superior surface.

The hepatic artery originating from the celiac axis and sometimes from the mesenteric artery as the common hepatic, once within the liver substance, runs as a companion to the portal vein and bile-duct branches.

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When resection is contemplated it should be remembered that there is a lack of congruence between the portal and hepatic distribution. For the most part they run at right angles to each other.

The middle, right and left hepatic veins draining into the inferior vena cava (IVC) are constant. Sometimes the left vein enters the middle via one ostium into the IVC. The middle hepatic vein is in the plane of division of the right and left lobe, draining part of the anterior segment of the right lobe and the medial segment of the left lobe (figure 1).

With a knowledge of the liver anatomy, one should leave as little liver parenchyma as possible devoid of adequate blood supply and biliary drainage. Although there are teeming arborizing vessels and ducts, there are no collaterals. In essence, every artery, vein and duct is an end-organ in itself with no concomitant anastomosis.[2] Bearing this in mind, the idea of partial liver transplantation was conceived.

Technique

Donor and recipient animals are anesthetized with Nembutal®, 1 mg./Kg, and thoraco-abdominal areas are shaved and prepared with antiseptic. Endotracheal tubes are passed and the animals placed on a Byrd and/or Harvey's respirator, I. V. Ringer's solution being in progress during the procedure.

The operative sites are draped in a sterile manner and a right thoraco-abdominal incision made, care being taken for adequate hemostasis. The diaphragm is incised radially down to the IVC and dissection and identification of the hepatic veins are carried out. Similarly, the structures of the porta hepatis are identified and meticulously dissected—the portal vein and their branches, the hepatic duct, and the hepatic arteries. The right hepatic artery, right portal vein, and hepatic duct are clamped with noncrushing clam-vascular clamps and severed respectively. The right hepatic vein and varied numbers of hepatic veins to the right lobe are similarly treated.

After sectioning the right triangular ligament and the coronary ligament, the removal of the segments on the right side is completed. The relatively bloodless section of the variable segments is facilitated by the finger fracture and/or blunt dissection with the knife handle.

The donor's liver is removed in toto, preserving all the hepatic vein branches attached to a small segment of IVC, the portal vein and the common hepatic artery as far proximally as possible, the latter near its takeoff from the celiac axis on the aorta. Cold Ringer's solution chilled to about 4 to 10°C in ice is used to perfuse the hepatic artery via a no. 14 or no. 16 polyethylene catheter. There is a noticeable blanching of the liver parenchyma, and the golden opalescent bile in the biliary tree is replaced by this chilled solution. After dissecting the 3 segments of the right lobe, maintaining the integrity of the donor's gallbladder and ductal system, the segments are transplanted, with anastomosis of the IVC of the donor attached to hepatic veins to the recipient's right hepatic vein, or side of the IVC, with the latter being partially occluded by a Satinsky clamp during the anastomosis.

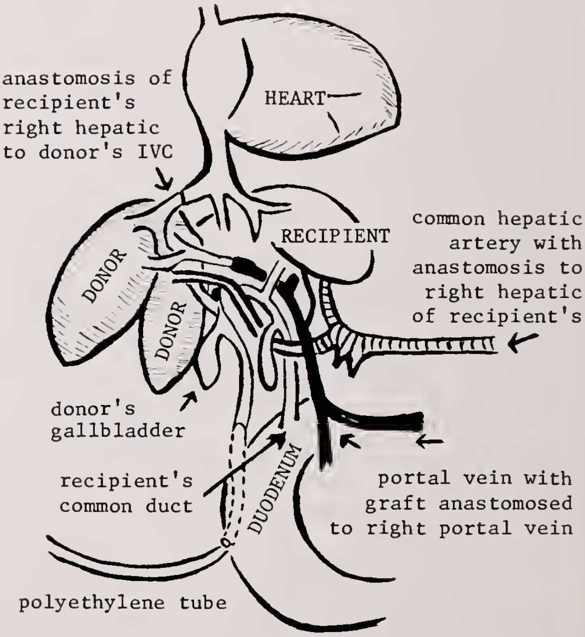
anastomosis of recipient's right hepatic to donor's IVC
HEART
RECIPIENT
common hepatic artery with anastomosis to right hepatic of recipient's
DONOR
DONOR
donor's gallbladder
recipient's common duct
DUODENUM
portal vein with graft anastomosed to right portal vein
polyethylene tube

FIG. 2. Diagrammatic representation of partial orthotopic liver transplantation in the dog.

The portal vein is anastomosed to the recipient's right portal vein, following which the clamps are released, with prompt restoration of the circulation. There is observable change from blanched pale red to a dark reddened hue. Similarly the gallbladder and biliary tree regain their green tinge as bile begins to form even before completion of a hepatic arterial anastomosis with a diameter as small as 2 mm. (figure 2).

Finally the common duct was cannulated with a no. 14 polyethylene tube and passed into the duodenum distal to the recipient's common duct.

An oblique tunnel is made in the sero-muscular layer, with the lumen of the duodenum entered obliquely and exiting about 3 cm. The periductal tissue is tacked to the seromuscular layer. The tube is brought out through a stab wound in the right subcostal region with free flow of bile noted. In a third dog the donor's common duct was ligated and cholecystoduodenostomy performed. Bile was also formed following the anastomoses.

The thoraco-abdominal incision is closed in layers after closing the diaphragm and attaching the donor's triangular and coronary ligaments to the recipient's diaphragm.

Discussion

Undoubtedly the general surgeon should be familiar with the anatomy of the liver and should be able to rise to the occasion when faced with traumatic rupture of the liver. The anatomic outline as stated can be worked out individually in the cadaver with the fullest satisfaction. The technique of relatively bloodless blunt dissection with the handle of the scapula is best. The vessels and ducts may be clamped and ligated when encountered.

Some of the proposed indications for hepatic lobectomy are:

1. Traumatic rupture of the liver.
2. Large localized benign tumor, for example, cyst and hemangioma.
3. Primary carcinoma involving one lobe.
4. Metastatic lesion localized to one lobe.

Indications for considering hepatic lobectomy and partial orthotopic transplantation are:

1. Laennec's cirrhosis of the liver with portal hypertension.
2. Cirrhosis due to biliary atresia.

While a number of investigators have performed either orthotopic or auxiliary heterotopic liver transplantation,[3] the experimental models as described here are believed to be advantageous in that the procedure can be executed with partial or no occlusion of the major vessels, so that at no stage will it be mandatory to reroute the venous blood with cannulae and thus create the hypercoagulability states sometimes encountered in total transplant.[4]

The allograft is assured of portal inflow in the presence of portal hypertension, the latter being invariably found in cirrhotics. Further, it is predicted that since both donor and recipient liver lobes will be simultaneously receiving portal blood flow from the splanchnic bed, thus eliminating unfavorable competition for metabolites, this will mitigate against atrophy of donor or recipient liver reported by other investigators.[5]

The disadvantage of having an auxiliary liver heterotopically placed with respiratory embarrassment resulting from added space-occupying mass will not be a problem with this model since the size of the lobe removed is approximately the same.

Some of the possible factors involved in causing the demise of all 3 animals receiving orthotopic lobes are:

1. Hypovolemia due to blood-loss during the procedure, with added insult created with the rapid loss of blood required to fill the liver allograft following anastomosis and reinstitution of blood flow.
2. A vasodepressor substance (X) has been incriminated by some investigators.
3. High concentrates of potassium liberated from the ischemic liver allograft might have adverse effects on the myocardium, leading to arrythmia, fibrillation, and cardiac standstill despite resuscitative measures instituted.[6]
4. The liberation of acid metabolites is also a factor considered.

We are by no means disheartened over the fatal outcome of our experimental models. We feel very optimistic for the future, since we have satisfactorily demonstrated the technical feasibility of anastomosing vessels as small as 2.5 mm. Indubitably, there was functional parenchymal activity exemplified by the prompt production of bile produced in the biliary tree. As soon as we have refined and coördinated problems encountered in anesthesia and metabolic derangement during the procedure we are confident in having a respectable survival and follow-up.

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Asymptomatic Coronary Artery Disease and Peripheral Arteriosclersis Obliterans*†

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ROBERT H. PETER, M.D.,‖ COMMANDER THOMAS B. BEACH, MC, USN,¶
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THE HIGH INCIDENCE of coronary arteriosclerotic heart disease among patients with peripheral arteriosclerosis obliterans is well known.[1, 2] In series of patients with aorto-iliac or femoral artery occlusive disease, 30 to 40 per cent have been found to have evidence of coronary heart disease.[3] Only about half of these patients have symptons of angina pectoris or previous myocardial infarction. The remainder are found to have abnormal electrocardiograms during the evaluation of their cardiovascular status.

We were concerned by the death of a 42-year-old menstruating patient who died of myocardial infarction following surgical treatment of her peripheral arterial disease. She had no cardiovascular symptoms and electrocardiograms were normal, but postmortem examination showed severe and extensive coronary atherosclerosis. We began a study to attempt to determine the incidence of asymptomatic coronary artery disease in a group of patients hospitalized for the surgical treatment of peripheral vascular insufficiency. This is a preliminary report of the first 13 patients in our study.

Methods

Pertinent data concerning the group studied are given in table 1. There were 12 males and 1 female, aged 37 to 59 years, with a mean age of 45 years. Lower-extremity claudication was moderately severe in all patients and peripheral-vessel occlusion was demonstrated by aortography. Selective coronary arteriography was performed by means of the Sones technique. All patients smoked 1 pack of cigarettes or more per day. Three patients were hypertensive and 3 had diabetes mellitus. Two patients had elevated serum cholesterol levels. No patient had angina pectoris, previous history of myocardial infarction, or evidence of congestive heart failure. Resting electrocardiograms were normal in all patients, and the electrocardiogram after a double Master's exercise test was normal in all of the 7 patients in whom the test could be done. All patients were operated upon, with 1 death in the female patient described.

TABLE 1: Pertinent Data on 13 Patients with Peripheral Arteriosclerosis Obliterans

	Present	Absent
Intermittent claudication	13	0
Smoking history	13	0
Hypertension	3	10
Diabetes mellitus	3	10
Elevated serum cholesterol	2	11
Chest pain	0	13
Abnormal rest ECG	0	13
Abnormal exercise ECG	0	7

Results

Results of selective coronary angiography are listed in table 2. Six of 12 patients had normal-appearing vessels. Two patients had mild coronary artery obstruction defined as less than 30 per cent decrease in the diameter of the lumens. Four patients considered to have severe involvement had 3-vessel disease with 50 to 100 per cent occlusion of at least 1 major vessel.

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† The opinions or assertions contained herein are those of the authors and are not to be construed as official or reflecting the views of the Navy Department or of the Naval Service at large.

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Discussion

Clinical manifestations of coronary arteriosclerosis are common in patients with vascular disease of the extremities. Angina or previous myocardial infarction are especially frequent in patients with femoral or popliteal occlusive disease, who tend to be older males and are often diabetic.[4] Our patients tended to have predominantly aorto-iliac disease, tended not to be diabetic, and were all less than 60 years of age. None had clinical evidence of heart disease, yet over a third of them were found to have significant coronary obstruction.

The correlation of coronary arteriography with clinical heart disease is quite good. The significance of angiographic lesions in asymptomatic patients, however, is not clear. This distinction between vessel obstruction and clinical heart disease has been emphasized recently,[5] and it is clear that observation will be necessary to clarify the natural history in these patients.

TABLE 2: Results of Coronary Arteriography in 13 Patients

	Vessel Occlusion			
	Normal	Mild	Moderate	Severe
Coronary arteriography..	6	2	0	4
Autopsy....................				1

One of our asymptomatic patients, a diabetic with moderately severe coronary obstruction, subsequently developed angina pectoris and serious ventricular arrhythmias 7 months after aorto-iliac endarterectomy. A second coronary arteriography revealed marked progression of his 3-vessel disease. We have not, otherwise, observed angina in patients following surgical relief of their ischemic leg symptoms.

Patients with peripheral arteriosclerosis obliterans have a decreased life expectancy, and this seems to be due to their associated coronary atherosclerosis, since the vast majority die, not of peripheral vessel disease, but of myocardial infarction.[6,7] Peripheral vascular surgery then should be considered palliative in these patients, because although it improves symptoms it does not prolong life.[8]

Likewise, the effect of coronary occlusive disease on operative risk can be inferred from studies on patients with heart disease undergoing major surgery. A 2 to 3 times greater operative mortality has been found in patients with angina, previous myocardial infarction, or abnormal electrocardiograms.[3] In patients undergoing peripheral vascular surgery Dundas and Hall[4] found evidence of coronary heart disease in 23 per cent of patients under 60 years of age. Operation for aorto-iliac disease in this group carried a 5-fold risk over patients without associated heart disease. The commonest cause of operative death was myocardial infarction.

In considering patients for peripheral vascular surgery a careful search should be made for clues to associated vascular disease of the coronary, cerebral, and other visceral circulations. Meticulous examination of the cardiac and cervical vessels, laboratory and electrocardiographic evaluation, supplemented in some cases by coronary arteriography, should be done. After identifying the high-risk patient in this manner special precautions can be taken in pre- and postoperative care to minimize the hazard and enable him to benefit from surgical treatment of his vascular insufficiency. Likewise, patients found to be free of associated vascular disease can perhaps be offered earlier or more aggressive surgery with the knowledge that asymptomatic coronary artery disease will not nullify its beneficial results.

Summary

Coronary arteriosclerotic heart disease is a major determinant of the natural course of patients with peripheral arteriosclerosis obliterans. A study of these patients without clinical evidence of heart disease indicates a significant incidence of asymptomatic coronary artery disease. The implications in terms of surgical therapy have been discussed.

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(Continued on page 317)

Residency Training in Public Health in the District of Columbia

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The District of Columbia Department of Public Health (the Department) in collaboration with the Howard University, College of Medicine, Department of Community Health Practice (Howard) has offered accredited residency training in public health since January 1966. There are at present 24 civilian and 3 Army programs.[1]

The primary objective of the program is to train physicians in public health practice and administration, while training for research and teaching in public health is secondary.

The goal of the program is to train physicians already in the field and to recruit new ones to public health. The Department's foremost responsibility is to prepare trainees for broad and responsible positions within the Department, starting with its own employees. There is a strong responsibility to train physicians for work throughout the United States and to train foreign physicians for work in their own countries.

On completion of the residency the trainee should have a good orientation to preventive medicine, especially to the subspecialties of public health and general preventive medicine, and he should have an introduction to the other subspecialties of aerospace medicine and occupational medicine. He should be able to pass the certifying examinations of the American Board of Preventive Medicine in public health and general preventive medicine.

The program consists of 2 years of field training and 1 year at a school of public health. In the field training a combination of the 3 following elements is provided:

1. Orientation to preventive medicine, especially public health, as it is practiced in the Washington Metropolitan Area, primarily through a series of consultations and seminars with program directors and planned visits to observe activities in the Department and many other agencies.

2. Formal class activities at Howard in which residents may audit courses in community medicine and in which the qualified resident may be a teaching assistant with responsibility for groups of medical students.

3. Supervised job responsibilities in the facilities of the Department or in the teaching hospital of Howard. The resident may be given responsibility for operation of a program, such as heart disease control or part of it, or for special research or evaluation studies, such as on the utilization of school health physicians. Supervision is given by the program directors in the Department and the faculty at Howard.

Financial support is given the trainee by placing him in a residency position in the Department with starting salary dependent on previous training and experience. The minimum is that of a first-year clinical resident at the Department's D. C. General Hospital and the maximum is that of a Bureau Chief, the third highest salary paid by the Department ($8,500 to $22,300+).

All the stipends and salaries are now absorbed within the budget of the Department. The first application to the United States Public Health Service for funding was denied for lack of funds, and the second is currently being considered. Expenses at the school of public health must now be defrayed by the student or through a traineeship obtained by his own efforts.

The first resident was a Bureau Chief who has since been certified in public health. At present there are 8 residents, 4 in graduate school and 4 in field training. Two are in the third year, 4 in the second, and 2 in the first year of the residency. Two are foreign nationals with limited public health experience in their own countries, 2 are a former and a present USPHS employee with moderate experience, 3 are previous Department employees with only clinical experience, and 1 came from a clinical residency outside the Department.

The program offers many advantages. The Department is one of the largest in the country, serving 820,000 people, with about 6,000 employees and a budget approximating $100 million. It has activities in almost every field of personal and environmental public health, general preventive medicine, occupational health, and medical care.

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The resident has the opportunity for general orientation in all the standard fields, such as health education and acute disease epidemiology, and in most of the newer fields, such as suicide prevention, treatment of acute and chronic alcoholism, comprehensive care through neighborhood health centers, etc. In addition, he may elect to spend more time in any of these fields. An affiliation with 2 neighboring counties, Prince George's in Maryland and Arlington in Virginia, allows orientation to and participation in the activities of health departments serving suburban communities and rural areas. The residents are assigned to each county for 1 month.

The affiliation with Howard allows the resident to audit lectures and seminars given by the Department of Community Health Practice. This is helpful to those who have been out of medical school for some time and to those who have had little contact with biostatistics, epidemiology, environmental health, etc., and it brings them the current body of knowledge in community medicine. They also have an opportunity to teach by leading seminar groups and occasionally have been called upon to lecture. The affiliation has also allowed work assignments at Freedmen's Hospital, with supervision by the community health and clinical faculties. Instruction in research methodology has been given to some residents working on special projects, and all have participated in a Journal Club which meets regularly.

The Washington locale allows orientation to public and private operations on the international level, such as the Pan American Health Organization; Federal operations of all agencies, such as HEW, AEC, etc.; and state-level operations in Maryland and Virginia. There are opportunities for additional academic experience through the Departments of Community Medicine and International Health at Georgetown and Preventive Medicine at George Washington. The resident may attend occasional lectures and seminars at Johns Hopkins and Maryland Universities.

Working within the Department itself affords the opportunity to see how operations are conducted on the Federal level, for example, through the activities of Congressional District Committees; at the state level through the development and implementation of the plan for hospital facilities; and on the local level through the conduct of prenatal clinics and neighborhood centers.

The training program has certain disadvantages which should be mentioned. Most importantly, the Department is not a training facility and has no personnel who can devote a majority of their time to the residency program. The closest that can be obtained is supervision of the individual resident in his work assignment by one of the Department's program chiefs or by a member of the Howard faculty. Because the traineeships are not yet funded by the Public Health Service, the salaries have been borne directly by the District. Even if such stipends were available, since there is no indirect cost funding, the Department would still have to provide from its limited resources the assistance of its training division and secretarial and clerical help, which must be available daily. These budgetary limitations restrict the size of the program and preclude active recruiting.

One difficulty in developing the training program is that each of the residents has come with a different background and needs. This has required a tailor-made program for each.

Some of the residents have been able to assume responsibility for planning and operations of whole programs or parts, under general supervision. Others have needed closer supervision in directed studies and program evaluations and have not been able to accept operational responsibilities.

Another disadvantage is that the Department's organization does not facilitate placement of the resident as an assistant to one person who directs comprehensive public health operations. For example, in Philadelphia each resident is assigned as an assistant to a district Director and assumes increasing responsibility for the district's operations.[2] However, Washington, D. C. is presently divided into 4 health areas and it may shortly be possible to assign residents in a similar way.

The program can offer contact with aerospace medicine as practiced by the F.A.A., CAB, the military and commercial carriers, etc. Similarly, the Washington locale affords exposure to occupational medicine as practiced by government agencies of all sorts and private industry of the white-collar type and in small plants. There are comparatively few heavy industries. In our opinion, field training is more than adequate for anyone wishing to enter the field of public health, adequate for general preventive medicine, and inadequate for aerospace medicine and occupational medicine. The last 2 fields are so different in technical content that extensive additional training is essential.

All the disadvantages mentioned above apply generally to the 26 other public-health training programs.

Discussion

"The specialty area of preventive medicine is difficult to define. It appears to be more an emphasis than a separate body of medical knowledge."[3] Wolf[4] has characterized it as "the specialty of ?" On the other hand, Ellingson[5] stated that ". . .the concept of preventive medicine [embodies] . . . a basic core of distinctive knowledge (epidemiology, biostatistics, environmental health, and health administration), with deeper specialization in a limited area of emphasis." This will be imparted hopefully in the graduate phase at a school of medicine or public health, with practical application in field training at a health department, hospital or other health service agency, or a research institute.

In public health we believe these objectives can best be accomplished by a year at a school of public health and 2 years of field training. In the latter, the resident need not be taught the clinical aspects of medicine nor the academic aspects of biometrics, epidemiology, etc. He should obtain as broad a view as possible of preventive medicine as it is evolving and is practiced today. This should include such ordinary items as the conduct of bureaucratic life and methods of handling personnel, the more sophisticated aspects of program planning and evaluation, and research in the delivery of health care.

After our limited experience we believe this training can best be given by devoting the first year to orientation by the Department (and in the other health agencies and organizations in the Washington Metropolitan Area) and academic preparation at Howard, followed by a year at graduate school, and then by a year in 1 or more work assignments with specific responsibilities and regular supervision.

After completion of the academic year our residents should meet the basic requirements for entrance into public health and general preventive medicine but not into aerospace medicine or occupational medicine.

Summary

Two-year field training in public health is offered by the District of Columbia Department of Public Health and the Howard University (College of Medicine) Department of Community Health Practice. One year full-time study at a school of public health completes the residency. The graduate should pass the certifying examinations in public health and general preventive medicine.

The primary objective is to train physicians for public health practice and administration. The field training provides orientation to current practice of preventive medicine, especially public health, formal class activities at Howard, and supervised work responsibilities. The metropolitan Washington locale offers the advantage of exposure to most health fields on local, state, national, and international levels, and practice in urban, suburban and rural areas.

The main disadvantage is that the primary sponsor is a service agency with limited training funds and no full-time preceptors. This is true of most public health residency programs.

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Aids to Cardiac Diagnosis from Examination of the Cervical Veins*

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FOR INSPECTION of the jugular veins the patient should be positioned so he lies with the thorax elevated approximately 30 degrees from horizontal on a bed or examining table which breaks at the hips, allowing the thorax, abdomen, head and neck to be elevated while the lower extremities remain horizontal. The veins are best seen with artificial light directed tangentially across them in order to produce shadows.

Order of procedure: The external jugular veins and the internal jugular veins should be identified bilaterally. In many patients the external jugular veins are invisible. Important information may be missed if the internal jugular veins are not examined. If pulsations are not visible in the internal jugular veins with the patient's thorax elevated to 30 degrees, the thorax should be raised or lowered. The internal jugular veins lie deep to the sternomastoid muscles and are best recognized by their broad, undulating, and triphasic pulsations (figure 1). The a wave is produced by atrial systole. It is the quick wave which just precedes the carotid pulse. The descending limb of the a wave is followed by a negative wave, the x wave, produced by atrial diastole (figure 2). The x wave is followed by the second positive wave or c wave (figure 1). The c wave results from bulging of the tricuspid valve into the right atrium as the right ventricle begins to contract; however, in the neck veins the c wave is considerably augmented by the underlying carotid pulse. The third positive wave of the jugular pulse is the v wave, which is produced by passive filling of the right atrium (figure 1). The descent of the v wave is referred to as the y descent (figure 2), inscribed as the tricuspid valve opens and blood flows into the right atrium.

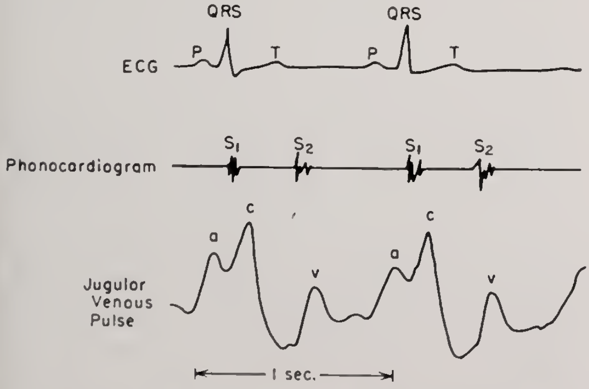

FIG. 1. External recording of normal jugular venous pulse, demonstrating a, c and v waves. Reproduced by permission from Fowler, N. O.: Cardiac Diagnosis. New York: Hoeber-Harper, 1968.

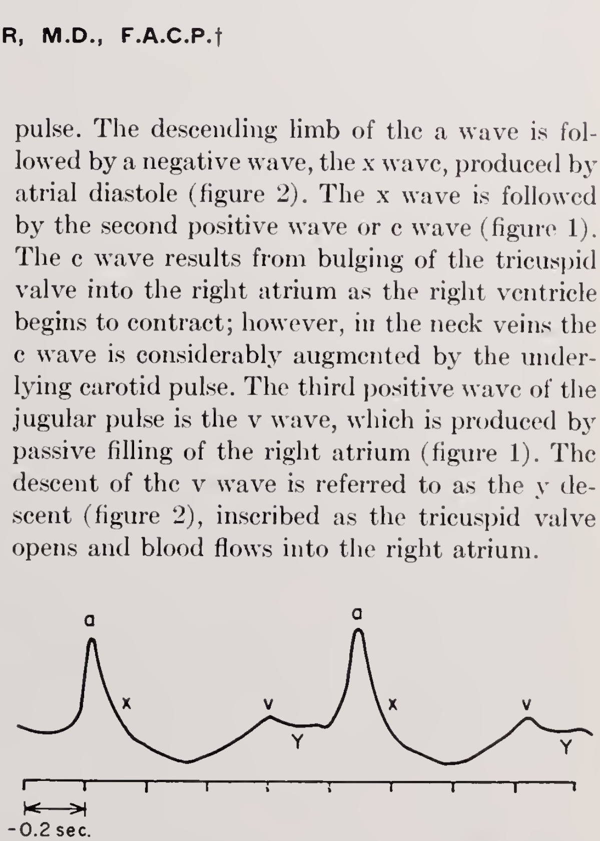

FIG. 2. External recording of jugular venous pulse of a patient with tricuspid stenosis, showing large a wave and slow y descent. Reproduced by permission from Fowler, N. O.: Cardiac Diagnosis.

When large v waves dominate the internal jugular pulse as a result of right ventricular failure or tricuspid insufficiency, the venous pulse may be confused with the carotid pulse. The following procedures will distinguish the 2. Moderate pressure with a tongue blade or the edge of the hand will obliterate the jugular but not the carotid pulse. If the cervical venous pressure is increased because of right-heart failure, abdominal pressure with the hand, sustained for 30 seconds or so, will usually cause the venous pulse to become larger and to ascend higher in the neck (hepatojugular reflux). With the Valsalva maneuver the jugular veins usually become more distended but lose their pulsations, but not the carotid arteries. Usually the jugular venous pulses descend lower in the neck during inspiration or when the patient's head is raised, but the carotid pulse is not so affected.

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* Submitted to the MEDICAL ANNALS by the Washington Heart Association.

† Professor of Internal Medicine, University of Cincinnati College of Medicine; Director, Cardiac Research Laboratory, Cincinnati General Hospital, Cincinnati, Ohio 45229.

Information Obtained from Examination of the Jugular Veins

1. ***Estimation of the systemic venous pressure.*** When internal or external pulsations are more than 2 or 3 cm. above the manubrium, one may be confident of elevation of systemic venous pressure, usually from right ventricular failure or constrictive pericarditis. A positive hepatojugular reflux confirms this observation. The patient must continue to breathe normally and must not perform a Valsalva maneuver during the test. Bilateral nonpulsatile distention of the jugular veins, associated with a collateral venous pattern over the upper chest, suggests superior vena caval obstruction from aortic aneurysm, lymphoma, thymoma, or bronchogenic carcinoma.

2. ***Distention of only the left jugular veins.*** This usually indicates obstruction of the left innominate vein (kinked left innominate vein). This most commonly results from an elongated aortic arch associated with hypertension or atherosclerosis. However, on occasion, the left innominate vein is compressed by an aneurysm involving the aortic arch.

3. ***Prominent a waves in the jugular venous pulse with each cardiac cycle.*** These suggest forceful right atrial systole, related either to tricuspid obstruction or increased thickness of the right ventricular wall (decreased compliance). The following clinical causes may be considered:

a. Tricuspid stenosis. Usually there is accompanying rheumatic mitral disease. The a wave may ascend in the neck during inspiration; normally it descends during inspiration. There are usually shallow and slow x and y descents (figure 2).

b. Congenital tricuspid atresia.

c. Right atrial myxoma.

d. Pulmonary valvular stenosis of moderate or severe degree. Prominent a waves are ordinarily not to be found in tetralogy of Fallot.

e. Congenital pulmonary atresia with intact ventricular septum.

f. Pulmonary hypertension. Mitral stenosis, lung disease, idiopathic or thrombo-embolic pulmonary hypertension, or pulmonary arterial branch stenosis may be the cause. Prominent a waves occasionally occur in Eisenmenger's syndrome.

g. First degree A-V block of sufficient degree that atrial systole occurs when the tricuspid valve is closed. Similarly, large a waves may occur during A-V nodal rhythm.

4. ***Irregular giant a waves or cannon a waves.*** These may occur with premature atrial or ventricular systoles if atrial systole coincides with ventricular systole. Irregular cannon a waves also may occur with a regular ventricular rhythm when there is atrioventricular dissociation resulting from complete A-V block, A-V dissociation by interference, or paroxysmal ventricular tachycardia. With complete A-V block in adults the ventricular rate is usually near 40 per minute, and there is varying intensity of the first heart sound. With A-V dissociation by interference the ventricular rate is usually between 60 and 110 per minute. With ventricular tachycardia the ventricular rate is usually between 130 and 250 per minute. The atrial rate, as judged by the jugular a waves, is most often at the normal sinus rate of 60 to 100 per minute.

5. ***Atrial flutter.*** With this one may be able to detect small rapid regular oscillations which occur approximately 300 times per minute.

6. ***Prominent c-v waves with obliteration of the x descent.*** These usually reflect tricuspid insufficiency. This sign is most pronounced in patients with rheumatic mitral disease and rheumatic tricuspid insufficiency; it may also occur with right heart failure.

7. ***The y descent.*** This is usually accentuated with constrictive pericarditis (diastolic collapse of Friedreich). Patients with constrictive pericarditis almost invariably display increased venous pressure. Some demonstrate increased jugular distention during inspiration (Kussmaul's sign). This sign may be positive in occasional patients with right ventricular failure, especially in those with restrictive myocardiopathy.

The Allergenicity of Psyllium Seed

Report of a Case

HARRY S. BERNTON, M.D.[*]

I am indebted to Dr. John F. Harrington for the opportunity of presenting the following case report:

The patient, a male, aged 29, was first seen on May 24, 1969. The family history was negative for allergy. He has 1 brother, 2 sisters, and 2 children. Childhood diseases, including whooping cough and a susceptibility to "colds," featured his past history. He had been free of eczema and hives. His last attack of ivy poisoning occurred 4 years ago at the age of 25.

The present illness dated back to December 1968 when catarrhal symptoms first appeared—paroxysmal sneezing which was worse in the morning after arising, profuse coryza, lachrymation, stuffiness of the nose, slight impairment of the sense of smell but not of taste, and itching of the eyes and nose.

One month later, in January 1969, chest symptoms, characterized by a dry cough, first appeared. The cough became aggravated. The expectoration was scant but clear. Additional symptoms developed—itching of the throat, tightness in the chest, wheezing, dyspnea and orthopnea. These symptoms were attributed to the presence of a cat which had been a member of the family circle for 3 months. The attacks of asthma appeared as a general rule at night after going to bed.

The noteworthy findings of the first physical examination were as follows: weight 210 lbs., height 6 feet, pulse rate 76, blood pressure 118/88, nose, throat and ears negative. There was no dyspnea or cyanosis. Musical rales of varying pitch were present throughout both lungs. The maximum expiratory flow rate measured 380 by the Wright peak flowmeter.

Tests for protein sensitization were performed by the cutaneous method with 141 allergens. These comprised epidermal and miscellaneous proteins, the pollens of the trees, grasses and ragweeds, molds and selected foods. A markedly positive reaction was obtained only with the psyllium seed. Positive reactions with this allergen have been rarely encountered, and the channels whereby the patient developed contact with or exposure to the allergen were bewildering. Happily, the patient provided the answer to the questions which his unusual reaction presented. He announced during his visit which followed the test session that he had a supply of psyllium seed in his home.

He then unfolded an interesting series of events in his family life. In August 1968 his wife on advice of her obstetrician began to use Metamucil® as a laxative. Since she disliked the odor and taste of the medication the patient assumed the responsibility of taking 1 teaspoonful of the Metamucil powder out of the container, placing it in a glass of water and handing the potion to his wife. The procedure was carried out in the evening. One month later the patient developed a cough which persisted, and in January 1969, 5 months after the initial exposure, asthmatic symptoms developed. The severity of the disease gradually increased until May 1969, the time of his first visit.

It will be recalled that asthmatic attacks were at first attributed to the family cat. The cutaneous reaction to cat dander was negative. On June 11, 1969 a cutaneous test was performed with the Metamucil powder, and a vigorous reaction was obtained.

On June 17 a specimen of blood was taken from the patient for passive transfer studies. Two areas were sensitized with 0.05 ml. of the patient's serum on one arm of each of 2 recipients. Two days later the 4 sites were challenged by the application of the psyllium seed allergen to scratch marks made on the areas. The psyllium seed allergen consisted of the crushed seed. The reactions were positive on the sensitized area and negative on the control areas. The presence of a skin-sensitizing antibody in the patient's serum confirmed the identity of the allergenic factor. The recognition of the offending allergen led to its removal from the household and resulted in the restoration of the patient to normal health. When first seen on May 24, 1969, the Wright peak flowmeter registered 380; the reading on July 8 was 510; on August 26, 540; and on October 14, 540.

The Physicians' Desk Reference contains a description of Metamucil.[1] It reads in part: "Metamucil furnishes a smoothage effect and provides a bland nonirritating bulk which promotes natural elimination. It consists of a highly refined mucilloid of the psyllium seed . . . . It does not interfere with the absorption or digestion of vitamins or of carotene, and it is nonallergenic." Obviously, the last statement needs modification. Especially noteworthy and newsworthy is the warning sounded by the editors of the National Observer[2] concerning low-priced ice cream:

(*Continued on page 317*)

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Clinicopathologic Conference

Anemia, Azotemia and Anuria

CHANDLER SMITH, M.D., EDITOR*

THE FOLLOWING CASE REPORT was presented for discussion at the biweekly Clinicopathologic Conference held at The George Washington University Hospital, October 29, 1968.

The patient was a white woman 76 years old who entered the Hospital because of coughing, shortness of breath, and a retrosternal sensation of heaviness and pressure. She had been well until 4 months previously when anorexia was noted, causing a 6-pound loss of weight. Three weeks before admission orthopnea began, and 3 pillows were required. Weakness and a retrosternal sense of pressure were also felt at that time; the former was gradually progressive, and the latter was intermittent but never severely discomforting. There had been no previous illness referable to the urinary tract.

The patient did not drink alcoholic beverages, and she had not been taking medications. She had been hypertensive for the past year.

Physical examination revealed moderate respiratory distress. The temperature was 36.4° C, the pulse rate 114, the respiratory rate 22, and the blood pressure 200/90 mm. Hg. Cataracts were present in both eyes. The neck was supple, the thyroid was not enlarged, and distention of the neck veins appeared at 60 degrees recumbency. There were moist rales over both posterior bases. The heart, abdomen, and external genitalia were normal. There was slight pretibial pitting edema. The deep tendon reflexes were normally active.

The urine was yellow, acid, and slightly cloudy with a 2-plus proteinuria and no ketone bodies or reducing substances. Microscopic examination revealed 2–4 erythrocytes, 4–6 leukocytes, and many epithelial cells per high-power field. The hemoglobin was 8.8 Gm., the hematocrit was 28 per cent, and the leukocytes numbered 14,800 per c.mm. with 84 per cent segmented granulocytes, 10 per cent lymphocytes, and 6 per cent monocytes. Platelets were adequate. A serologic test for syphilis was negative.

The blood urea nitrogen was 81 mg. per 100 ml., serum sodium 132, potassium 4.3, carbon dioxide 19.5, and chloride 89 mEq./L. The total serum protein was 7.0 Gm. per 100 ml. with 4.3 Gm. albumin and 2.7 Gm. globulin. The blood cholesterol was 172 mg. per 100 ml. The total serum bilirubin was 1.2 mg., with 0.5 mg. direct reacting and 0.7 mg. indirect reacting. Serum glutamic transaminase was 43 units per ml., and the lactic dehydrogenase was 1,980 units per 100 ml. A portable chest X-ray film was interpreted as showing fluid in the costophrenic angles, a calcified granuloma at the left base, and the heart to be of upper normal size. An electrocardiogram disclosed premature atrial contractions and nonspecific ST-T changes.

The hospital course lasted 17 days. During this time the hemoglobin ranged between 7.8 and 9.1 Gm. per 100 ml. Reticulocytes reached 20 per cent on the sixth day, remained at this level for the ensuing 5 days, and then receded. The leukocyte count remained elevated at 13 to 14 thousand per c.mm. with a moderate neutrophilia. Platelets ranged between 141 and 280 thousand per c.mm. The blood urea nitrogen exceeded 100 mg. per 100 ml. on every day except 1, and the highest value on the thirteenth day was 177 mg. per 100 ml. The blood creatinine was 12 mg. per 100 ml. on the third day and gradually decreased to 7.6 mg. on the sixteenth day. The serum glutamic transaminase was consistently normal; the lactic dehydrogenase was 2,160 units on the second hospital day, gradually decreased to 500 units on the eleventh day, and then rose to 1,980 units on the fifteenth day.

In addition, the blood uric acid was 15.3 and 19.0 mg. per 100 ml. on the third and seventh hospital days, respectively. The antistreptolysin O titer was negative on the fourth day, and the direct Coombs' test was negative on the eleventh day. On the latter day also the serum bilirubin was 1.4 mg. per 100 ml., with 0.7 mg. indirect and 0.7 mg. direct reacting. The corrected sedimentation rate on the third and eleventh days was 28 and 21 mm. per hour.

During the hospital course the patient was for the most part afebrile. Her blood pressure remained essentially constant at 180/90 mm. Hg. She was markedly oliguric from the outset and became anuric on the tenth day. Peritoneal dialysis was performed repeatedly throughout the hospital course. She was digitalized, and nasal oxygen was given. Despite these measures she became anxious and short of breath; confusion and disorientation were evident on the fifth hospital day. Urograms revealed no abnormalities. Pulmonary edema recurred, and Cheyne-Stokes respirations developed on the twelfth day. Near anuria persisted. On the fifteenth day a small specimen revealed 4-plus proteinuria and 8–10 erythrocytes per high-power field. On the last day a bone-marrow examination disclosed a pronounced

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normoblastic hyperplasia. The patient lapsed into coma and died after 17 days in the hospital.

Clinical Discussion

Dr. Joel A. Reiskin[*]: The features of this case that require explanation are the hypertension, anemia, hyperuricemia, and renal failure with anuria and uremia. Renal disease associated with hypertension may be due to glomerulonephritis. This diagnosis would be unusual at the age of 76, however, and especially without a history of renal disease. Chronic pyelonephritis is also a possibility, although more indication of this in the history should be present, such as spiking fever, flank pain, dysuria, and pus in the urine. Amyloidosis may involve the kidneys and be associated with heart failure. The onset tends to be gradual, however, and anuria is not a usual consequence of this slowly progressing lesion. Moreover, there is no suppurative disease elsewhere in the body to associate with it. Since renal-vein thrombosis is characterized by the nephrotic syndrome rather than anuria this diagnosis is not attractive. Periarteritis nodosa is almost always associated with high blood pressure, and renal failure may occur. However, the diagnosis is not sound in the absence of eosinophilia and evidence of other organ involvement. Polycystic renal disease is also a possibility, although the onset at 76 years would be most unusual, the clinical course is much slower, anuria is not frequent, and masses may be palpated in the abdomen. None of these conditions thus seems to be a satisfactory explanation of the hypertension. It is possible, of course, that the patient has essential hypertension and that it is not related to the other features of this case.

I should like to see the X-rays now, please.

Dr. James H. Hepp[†]: The chest films show fluid in both bases. On the right there are fibrosis and prominent vascular markings. The heart does not appear to be enlarged. On the second film we see a little mottled radiolucency in the clavicle which possibly would be due to metastasis; it is not seen anywhere else. The film of the abdomen is not revealing. The kidney shadows are normal. This is probably the right kidney, perhaps a little low in position. The mucosal pattern of the intestine is obscure and the colon is probably normal. I cannot be sure if there is some prominence of the spleen.

Dr. Reiskin: Turning now to the anemia, it is apparent that there was a large loss of red blood cells that was associated with a pronounced reticulocytosis and a normoblastic hyperplasia of the bone marrow. These findings are characteristic of hemolysis when unaccompanied by evidence of hemorrhage. Hemolysis may be due to extracorpuscular and intracorpuscular causes. I will discard the latter at the outset. Extracorpuscular may be associated with lymphoma, leukemia, metastatic carcinoma, thrombotic thrombocytopenic purpura, and certain chemicals, especially lead poisoning. There is no indication in the history of lead or other chemical poisoning. Moreover, the notice from the laboratory of adequate platelets excludes thrombocytopenic purpura. This leaves the lymphomas. They are not infrequently associated with hemolytic anemia, and also may be the cause of an elevated blood uric acid. I would point out too that the high serum lactic dehydrogenase is expected with hemolytic anemia and may also be seen with malignant tumors such as a lymphoma.

I am left with the problem of explaining rather rapid renal failure progressing to anuria. One of the possibilities is that a retroperitoneal lymphoma has compressed the ureters so that no urine can flow. This requires the tumor to be symmetrical and to involve both ureters in the same way at the same time. I must regard such an event as unlikely. Much more appealing to me is that the hemolysis caused the renal ischemia, tubular necrosis followed, and tubular obstruction developed. This process may be advanced by the vascular disease that is present in kidneys associated with systemic hypertension. Cardiac failure, which was also present, may further contribute to the ischemic effect of the hemolysis on the renal tubules. It seems to me therefore that a retroperitoneal lymphoma associated with an extracorpuscular hemolytic anemia explains the largest number of findings in the most logical way. These include the hemolysis, the anemia, the high serum lactic dehydrogenase, and the renal component with tubular necrosis, uremia, and finally anuria. I am willing to believe that the hypertension was independent from these other considerations because high blood pressure would not be unusual in a patient of this age.

Dr. Arthur E. Rosenbaum[‡]: Will you please continue, Dr. Gooch.

Dr. Alden S. Gooch[§]: When the patient came in, the interest was on the existing hypertension and the possibility of angina. While she was in the hospital she later had hypervolemia caused by the uremia.

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[†] Senior Resident in Radiology, George Washington University Hospital.

[‡] Clinical Professor of Medicine, George Washington University School of Medicine, and Conference Moderator.

[§] Assistant Professor of Medicine, George Washington University School of Medicine.

A most important feature of the laboratory work, I think, is the reticulocytosis. When there is a very high reticulocyte count the most common cause is blood loss or hemolysis, and this would explain the high lactic dehydrogenase. I have trouble being sure of bleeding, however, lacking any history of hemorrhage. Blood loss has to be high on the list for any severe anemia to result. If she lost so much blood, it would point to the gastrointestinal tract, and a malignancy of the stomach or small bowel should be considered. However, nothing in the record supports this possibility. I am left with a diagnosis of severe bilateral renal disease with failure, but the precise type of disease is not clear to me.

Dr. Richard A. McConnaughy*: It seems to me that hemolytic uremic syndrome should be considered.

Dr. Reiskin: The condition is more common in children and usually includes a platelet abnormality.

Dr. McConnaughy: It may occur in adults, even at 76, and in some cases the platelets have been normal.

Dr. Rosenbaum: It is my experience that sudden anuria is uncommonly due to an obstructive lesion.

Dr. Reiskin: Anuria can be due to hemolysis, cortical necrosis, bilateral renal-artery thrombosis, renal stones, and obstructive uropathy.

Dr. Rosenbaum: We have then an elderly patient with anemia, severe renal disease, possibly punched out areas in bone, and uremia. These could suggest multiple myeloma, although it would be unusual not to have an elevated serum globulin. A positive bone-marrow examination would have been most helpful. Is this lesion in the clavicle consistent with myeloma?

Dr. Hepp: It is consistent with that diagnosis but by no means characteristic of myeloma.

Dr. Patrick A. Gorman†: The retrosternal pressure sensation, distention of neck veins, and fluid in the chest all indicate cardiac failure. There is, however, no evidence of primary heart disease.

Dr. Gooch: I thought the anemia was a sufficient explanation for the signs of heart failure. There is some other evidence; hypertension of this degree is certainly not uncommon in a woman of this age. The X-ray films do not reveal hepatomegaly. The electrocardiogram does not indicate long-standing arteriosclerotic heart disease. Altogether, I would relate the cardiac signs to the anemia and think that a primary heart disease is not necessary from these findings. That is, she may have had some heart disease, but it is of secondary importance in this case.

Clinical Diagnosis

Dr. Reiskin: Obstructive uropathy with renal failure, probably due to retroperitoneal lymphoma.

Dr. Gooch: Severe bilateral renal disease, type unspecified.

Pathology Discussion

Dr. Smith: The right and left kidneys weighed 225 and 175 Gm. The external surfaces were mottled with pale yellow so as to resemble acute pyelonephritis with abscess formation. The cut surfaces, however, revealed the yellow discoloration to be localized to the cortex and columns of Bertin (figure 1). Histologic examination then disclosed that these foci of yellow discoloration were not abscesses, but necrosis. The case is thus one of bilateral renal cortical necrosis. A histologic feature of such cases is that the coagulative necrosis tends to spare a narrow rim of subcapsular parenchyma as shown in figure 2. This is quite different from single infarcts which affect all of the cortex and occasionally extend into the medulla as well.

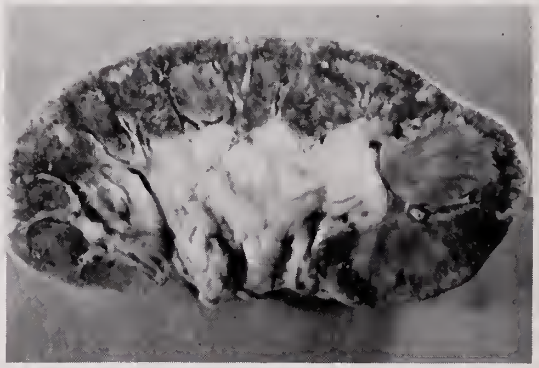

FIG. 1. Cut surface of right kidney showing cortical distribution of foci of necrosis.

The cause of renal cortical necrosis is not known. Approximately 260 cases had been reported by 1961,[1] and of these about two-thirds were related to pregnancy, especially with abruptio placentae and pronounced hemorrhage. The other third tended to be associated with sepsis. Among the causes of the latter was acute hemorrhagic pancreatitis. Shock was a common associated condition, and poisons, especially diethylene glycol, are known to be causative.

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* Clinical Instructor in Medicine, George Washington University School of Medicine.

† Assistant Professor of Medicine, George Washington University School of Medicine.

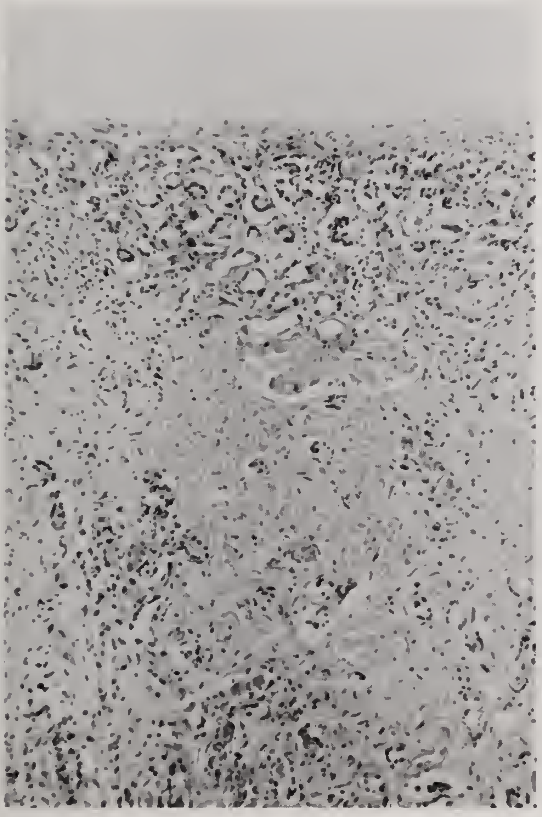

FIG. 2. Cortical necrosis with sparing of subcapsular zone.

Although recent infarcts and cortical necrosis are both examples of ischemic necrosis, there are perhaps 5 features that distinguish these 2 lesions and justify regarding them separately. Renal infarcts tend to be single and unilateral, may involve cortex and medulla, usually do not cause renal failure, and often are associated with an identifiable cause, especially mural thrombi of the left side of the heart with embolization. In contrast, renal cortical necrosis is multiple or solid, bilateral, limited to the cortex, usually causes renal failure with anuria, progresses ordinarily to a fatal outcome, and tends not to be associated with a demonstrable cause. All of these features are demonstrated in the case today.

Anatomic Diagnoses

Bilateral renal cortical necrosis.
Hypertrophy and dilatation of the heart.
Edema of the lungs.
Pleural effusions (right, 500 ml.; left, 500 ml.).
Uremia (clinical).

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(*Continued from page 307*)

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Allergenicity of Psyllium Seed—Bernton

(*Continued from page 313*)

". . . It's laced with seaweeds, psyllium seed husks, cellulose, and laboratory-concocted salts . . . ."

Drug allergy has long been identified as an important entity in our specialty. Nevertheless, its applicability to the present case is questionable. The medication produced its therapeutic effects in the patient for whom it was prescribed but produced a marked allergic reaction, as an inhalant allergen, in the person for whom it was not intended. The above study furnishes evidence of the service which the specialty of allergy contributes to clinical medicine.

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President's Page

ECOLOGY AND THE MEDICAL PROFESSION

Johnny Carson Show: Small boy and mother standing in front of Macy's in New York City. Boy to mother: "If you don't buy me that toy, I'll keep breathing till I turn blue." Some laughter and applause—humor meant to imply a serious point. Air pollution is only one area of environmental pollution.

Earth Day, 1970: I leave the Medical Society building after a noon committee meeting—traffic stopped at Virginia and Constitution Avenues by many hundreds of individuals (of all ages) "parading" to the Washington Monument to "demonstrate." Most are students attracted to this new subject of environmental survival. Students are aware of ecology, air and water pollution, and global hunger as topics that may mean life or death to millions of people, including themselves. It is said, and hoped, this will command their time and energies after the present war problem is ended. While sitting in my car, unable to move due to the masses in the street, I had time to contemplate the environmental pollution problem—more so, the medical profession's area of involvement.

Dr. Samuel C. Busey, President of the Medical Society in 1877 and from 1894 to 1899, stated in his Annual Address, delivered December 16, 1896: "At the meeting held January 22, 1896, this Society adopted a series of propositions relating to the sanitation of this city, setting forth the necessity of extension and purification of the water-supply, extension and completion of a system of foul water and sewage disposal, and compulsory connection of habitable and inhabited houses with such systems of water-supply and sewerage. At the same time it charged the Committee on Legislation with the duty of presenting these propositions to Congress and urging the necessary legislation."

It is interesting to note that nigh onto a century ago the Medical Society of D.C. exercised its knowledge to support legislation concerning environmental problems.

To further quote Dr. Busey: "A united profession . . . emphasizes its unquestionable right to assert itself in all matters pertaining to the elevation and advancement of a beneficial and life-saving science, and to the promotion of the welfare, health, and longevity of the people. Through all times and among all civilized people the profession of medicine has taken the lead in all such reforms, and whenever and wherever it has asserted the force and activity of united action, success has crowned its efforts."

If true a century ago, it is even more important and imperative today that the Medical Society of D.C. take a strong stand and advocate important actions at both local and national levels regarding environmental health.

To date we have done so when requested by legislators interested in presenting legislation regarding these issues. Several of our physicians have appeared before various Congressional Committees. Dr. Eloise W. Kailin, a member of our Committee on Environmental Health, presented the views of our Society regarding air pollution in the District of Columbia. This was a very impressive presentation and one that I'm sure helped set up the proper regulations.

We are always eager and willing to present our views and will always respond when called upon; moreover, we will request to be heard when we know such hearings are pending. But this is not enough. The Medical Society itself can only act in limited areas. You, the physician—the individual most knowledgeable in relating environmental conditions to the individual, mentally, physically, socially,—are the one who must discuss these problems with your patients. It may be as simple as plumbing or sewage in a local area, swimming in the Potomac, or as general as air, water or food pollution. It behooves you to know the problems, understand them, and be able to discuss them intelligently with your patients or your local administrative authorities.

Frank S. Pellegrini

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Warnings: Use with discretion during the second and third trimesters of pregnancy and restrict to patients not cured by topical measures. Flagyl (metronidazole) is secreted in the breast milk of nursing mothers. It is not known whether this can be injurious to the newborn.

Precautions: Mild leukopenia has been reported during Flagyl use; total and differential leukocyte counts are recommended before and after treatment with the drug, especially if a second course is necessary. Avoid alcoholic beverages during Flagyl therapy because abdominal cramps, vomiting and flushing may occur. Discontinue Flagyl promptly if abnormal neurologic signs occur. There is no accepted proof that Flagyl is effective against other organisms and it should not be used in the treatment of other conditions. Exacerbation of moniliasis may occur.

Adverse Reactions: Nausea, headache, anorexia, vomiting, diarrhea, epigastric distress, abdominal cramping, constipation, a metallic, sharp and unpleasant taste, furry or sore tongue, glossitis and stomatitis possibly associated with a sudden overgrowth of *Monilia,* exacerbation of vaginal moniliasis, an occasional reversible moderate leukopenia, dizziness, vertigo, drowsiness, incoordination and ataxia, numbness or paresthesia of an extremity, fleeting joint pains, confusion, irritability, depression, insomnia, mild erythematous eruptions, "weakness," urticaria, flushing, dryness of the mouth, vagina or vulva, vaginal burning, pruritus, dysuria, cystitis, a sense of pelvic pressure, dyspareunia, fever, polyuria, incontinence, decrease of libido, nasal congestion, proctitis, pyuria and darkened urine have occurred in patients receiving the drug. Patients receiving Flagyl may experience abdominal distress, nausea, vomiting or headache if alcoholic beverages are consumed. The taste of alcoholic beverages may also be modified.

Dosage and Administration: *In the Female.* One 250-mg. tablet orally three times daily for ten days. Courses may be repeated if required in especially stubborn cases; in such patients an interval of four to six weeks between courses and total and differential leukocyte counts before, during and after treatment are recommended. Vaginal inserts of 500 mg. are available for use, particularly in stubborn cases. *When the vaginal inserts are used* one 500-mg. insert is placed high in the vaginal vault each day for ten days and the oral dosage is reduced to two 250-mg. tablets daily during the ten-day course of treatment. Do not use the vaginal inserts as the sole form of therapy. *In the Male.* Prescribe Flagyl only when trichomonads are demonstrated in the urogenital tract, one 250-mg. tablet two times daily for ten days. Flagyl should be taken by both partners over the same ten-day period when it is prescribed for the male in conjunction with the treatment of his female partner.

Dosage Forms: Oral tablets . . . 250 mg.
Vaginal inserts . . 500 mg.

*References available on request.

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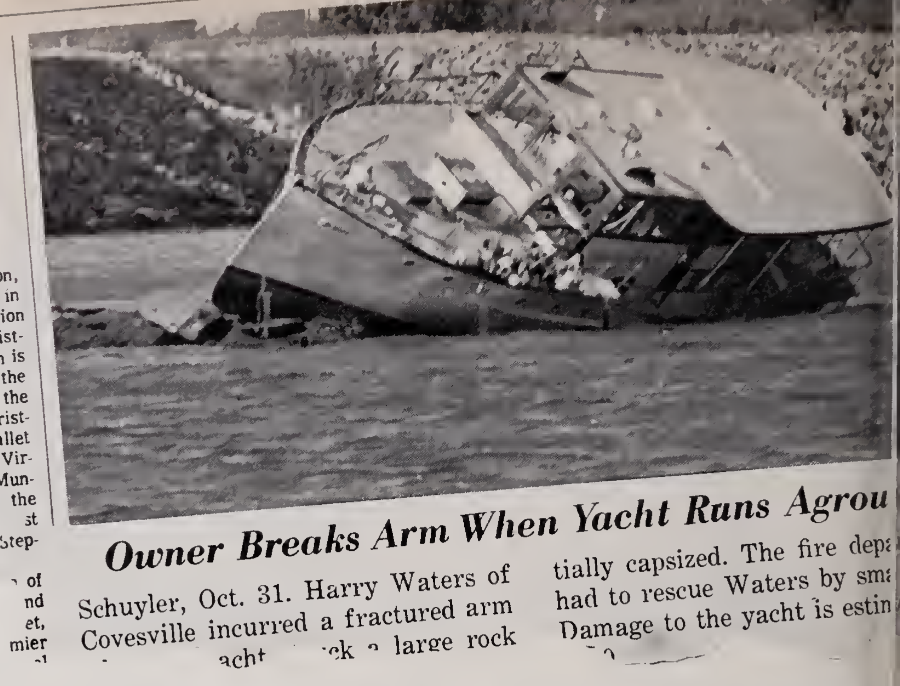
Research in the Service of Medicine



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Owner Breaks Arm When Yacht Runs Agrou

Schuyler, Oct. 31. Harry Waters of Covesville incurred a fractured arm acht ck a large rock tially capsized. The fire dep had to rescue Waters by sm Damage to the yacht is estin

Hasn't the skipper had enough excitement for one day?

For the patient who has been through an accident, the worry and anxiety following the mishap may actually heighten the perception of pain. This is why there's a classic ¼ grain *sedative* dose of phenobarbital in Phenaphen with Codeine— to take the nervous "edge" off, so the rest of the formula can control the pain more effectively.

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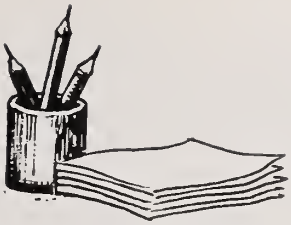
Phenaphen® with Codeine

Phenaphen with Codeine Nos. 2, 3, or 4 contains: Phenobarbital (¼ gr.), 16. mg. (warning: may be habit forming); Aspirin (2½ gr.), 162.0 mg.; Phenaceti (3 gr.), 194.0 mg.; Hyoscyamine sulfate, 0.031 mg.; Codeine Phosphate, gr. (No. 2), ½ gr. (No. 3), or 1 gr. (No. 4) (warning: may be habit forming

The compound analgesic that calms instead of caffeinate

Indications: Phenaphen with Codeine provides relief in severer grades pain, on low codeine dosage, with minimal possibility of side effects. Its us frequently makes unnecessary the use of addicting narcotics. Contraindica tions: Hypersensitivity to any of the components. **Precautions:** As with phenacetin-containing products excessive or prolonged use should b avoided. Side effects: Side effects are uncommon, although nausea, cor stipation and drowsiness may occur. Dosage: Phenaphen No. 2 and No. 3– 1 or 2 capsules every 3 to 4 hours as needed; Phenaphen No. 4—1 capsul every 3 to 4 hours as needed. For further details see product literature.

Editorials



The Concept of a Community Care Center*

There is an urgent need today for fresh concepts in health service delivery, particularly in our large urban communities. To bring these new concepts to life will require a strong bond of cooperation between schools of medicine within the community and urban government. Further, it is mandatory that schools of medicine place high priority on education of young physicians in the economic, social, and environmental aspects of health delivery systems.

Where else might the responsibility for experimental approaches to health care distribution lie? Individual practitioners, even when welded into groups, do not have the necessary resources to mount effective programs. Nor is experimentation the proper province of government alone. Schools of medicine must marshal the resources of their neighborhoods and focus the assets of government and its component agencies on well-defined community health programs. The result should be a series of model systems with which the student and young physician will identify and which will demonstrate the very real rewards of community group practice.

George Washington University is now planning such an approach. In January of this year the Division of General Medicine of the Department of Medicine was created at the George Washington University Medical Center to provide leadership within the School of Medicine for the creation of a group-practice environment. The Division is seeking to provide this environment by establishing for the residents of a defined geographic area a model practice system to include the spectrum of prevention, acute and nonacute ambulatory care, inpatient medicine, and rehabilitation.

Already the Division has assumed responsibility for operational aspects of both the outpatient clinics and emergency facilities at the GWU Medical Center. It proposes to weld these resources into a Community Care Center.

In addition to these more usual aspects of University medical practice, the School plans to implement several newer concepts in health care delivery. New kinds of health professionals will be developed. These will include physicians' assistants, or corpsmen, who will aid the medical school faculty in providing preventive and rehabilitative services.

Other new concepts will include the hiring of citizens from the community as health care expediters who will act as *ombudsmen* for their neighborhoods and the development of a transportation system to provide convenient access to ambulatory units. Also on the agenda are the establishment of a day-care facility for infants of patients and Center personnel and the provision of homecare services to patients who are unable to avail themselves of the Center's clinical facilities, especially those with stroke and malignant disease.

The George Washington University Medical Center believes that the crux of a successful execution of community responsibility is the ability to provide a single standard of care for all members of the community who seek service, regardless of personal economic status and irrespective of third-party insurance. Thus, it has offered to become a partner with the District of Columbia in the provision of health care to District citizens. And it has been gratified by the response of the D. C. City Council in its appeal for funds for the medically indigent who are not now eligible for Federal programs and who have no third-party insurers.

On the occasion of the opening of a new emergency area for patients requiring acute and urgent care, the George Washington University Medical

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* A portion of the remarks made at the opening ceremonies of the new acute care and emergency facilities at the George Washington University Medical Center, April 15, 1970.

Opinions expressed in contributions to the Editorial Section are those of the writers and do not necessarily reflect the views of the Medical Society of the District of Columbia

Center dedicates the facilities to the community—to all residents of the District of Columbia seeking medical assistance, but most particularly to those citizens who live in the area surrounding the Center and for whom the Center must bear responsibility for health service. To all of these citizens the Center pledges that service of the highest order will be rendered efficiently, courteously, and with dignity.

Thomas E. Piemme, M.D.
Professor of Medicine and
Director, Division of General Medicine,
George Washington University
Medical Center

Should We Make Marijuana Legal?

Today much is being said and done to urge the legalization of marijuana. The efforts come not only from the long-haired, dungaree-clad hippies equipped with grandmother's eyeglasses, but we see evidences of urging from the so-called "Establishment."

Even that bulwark of conservative journalism, *The Evening Star*, on January 23, 1970 published an editorial advocating a lessening of the penalties for the possession and usage of marijuana. That editorial sought to scale down the danger of marijuana by stating: "[It] is not an addictive drug. Its euphoric effects are relatively mild." The same editorial quoted from a report by Dr. Steinfeld that "the punishment is more harmful than the crime." However, the editorial writer neglected to note that Dr. Steinfeld in the same report stated that psychologic dependence on marijuana may occur and that spontaneous recurrences—"flashbacks" (i.e., a return to the state of intoxication previously induced by the drug without its being used at the time)—have been described.

Furthermore, *The Sunday Star* on February 23, 1970 in its magazine section published a feature article entitled, "Guess Who Else Smokes Pot." This was a factual article reporting on the usage of marijuana by such people of the "Establishment" as a policeman, a lawyer, an engineer, an NIH scientist, a special assistant to a Cabinet Secretary, and even 2 Congressmen.

While the article did not in so many words advocate legalization of marijuana, there was some inference that such legalization might be desirable. We noted particularly such statements as the one from the engineer: "From my own experiences I can't really believe it's worse than drinking. However, my suspicion is that because it's an unregulated, unknown substance, you can in all innocence smoke a lot of things that are not pot, or pot that's cut with a lot of things." Then the lawyer was quoted as saying, "That's one of the reasons I wish the government would take it under its wing. It would standardize it."

That well-known quotation of Dr. Goddard when he was Commissioner of Food and Drugs (though it was later denied) is ever with us and is frequently mentioned as an argument for legalization of marijuana.

Now we of the medical profession are often asked, and indeed perhaps we should ask ourselves, "Why not standardize and legalize marijuana?" If we accept the view that smoking "pot" only produces mild intoxication and that true physiologic dependence does not occur, and if we accept the statement by Goodman and Gilman, "There are no lasting ill-effects from the acute use of marijuana and fatalities have not been known to occur," why then are we concerned?

We are concerned because it is the chronic use of marijuana that we must evaluate. Psychologic dependence on the drug has been reported, and such dependence may be serious. Goodman and Gilman state: "A true drug psychosis may develop from marijuana and persist for a few hours or even weeks." Is this the kind of drug that should become readily available to anyone?

The case against marijuana legalization has been well stated by a physician who has firsthand knowledge of the marijuana problem. Colonel John J. Kovaric, MC, USA, in a letter to the Editor of *The Evening Star* on January 23, 1970 gave this most enlightening exposé of the effects of marijuana smoking on our soldiers in Vietnam: "One's judgment is completely destroyed while his physical control is left intact." He concluded by saying: "I have yet to meet any physician from Vietnam who was responsible for taking care of marijuana patients who did not decry the tendency of the uninformed to promote the use of it or to legalize its use. Because the punishments for the use of marijuana seem to be excessive, it is sheer lunacy to overreact by legalizing it in an attempt to eliminate a problem!"

Where, then, are we to take a stand in this problem? Are we to accept the views of the "instant experts" who without any knowledge of or training in pharmacology assure us that marijuana is a mild intoxicant no worse than a shot of whiskey, or are we to consider the effects of the drug as reported in recognized pharmacology tests, the Report of the Special Presidential Task Force, and evidence offered by the medical field officer from Vietnam?

Shouldn't we physicians, as responsible members of the community and in view of our unique knowledge of pharmacology, learn all we can about the reported effects of marijuana and strive to impart that knowledge to those with whom we come in contact? Undoubtedly, there are many, young and old, who would like to know just what smoking marijuana does to the human mind and body, and the informed physician is the person best suited to tell them.

Raymond A. Osbourn, M.D.

Don'ts for the Practitioner

The Federal Bureau of Narcotics has prepared "Don'ts for the Practitioner" to protect him from narcotic addicts and abusers.

Don't leave prescription pads around; addicts may be forgers.

Don't write a narcotic prescription in lead pencil, or any Rx at all in pencil, as it may be changed to call for morphine.

Don't write narcotics as "Morphine HT gr. ½ # X" or "Morphine HT gr. ¼ # 10." Several X's or zeroes can be added to raise the amount. Use brackets or write out the number.

Don't carry a large stock of narcotics in your bag. Addicts are often watching MD's offices and cars.

Don't store your office narcotic supply unprotected, especially near a sink or washroom; patients may ask to use these facilities.

Goodbye, My Friends

To relinquish a job one has held and loved for over 31 years cannot be done without some emotional trauma. But a career is like a well constructed sentence; there has to be a beginning, but perhaps more important is when to add the period, and I believe for me that time is now.

The years have flown swiftly; each one has left in its wake a bound volume, for my own span compressed into 3 feet 7 inches of shelf space. Beyond recording medical history in the District of Columbia, those volumes represent many returns in the way of friendships, opportunities for service, and skills developed through practice and necessity. But the editorial staff alone cannot produce an issue, and I wish to express my gratitude to all who have responded graciously and generously to my requests for editorials, feature articles, news items, and data of various kinds. And a fond farewell to my advertising friends, many of whom have supported our journal for as many years as my own.

It is with some apprehension and also with some anticipation that I pass to younger hands the opportunity to carry the Annals forward. I hope that you will make the days and weeks for my successor as exciting and as rewarding as you have made them for me.

Louise Eckburg
Executive Editor

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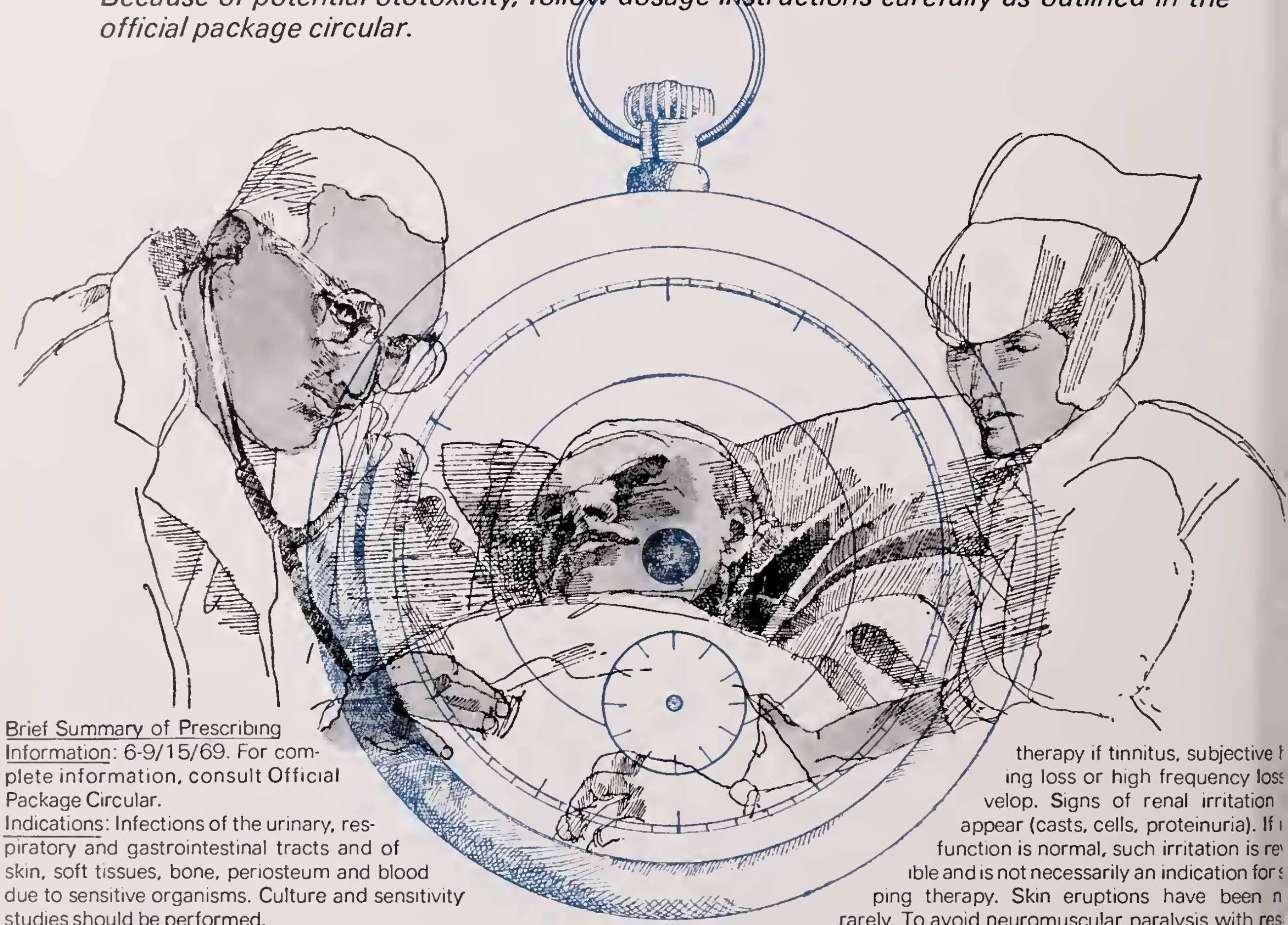
10 years of experience confirm the continuing effectiveness of Kantrex® against many Gram-negative bacilli (most Pseudomonas are resistant) and staph.

Because of potential ototoxicity, follow dosage instructions carefully as outlined in the official package circular.



Brief Summary of Prescribing Information: 6-9/15/69. For complete information, consult Official Package Circular.
Indications: Infections of the urinary, respiratory and gastrointestinal tracts and of skin, soft tissues, bone, periosteum and blood due to sensitive organisms. Culture and sensitivity studies should be performed.
Contraindications: A history of hypersensitivity to the drug. Prior auditory damage by kanamycin or other agents may be a contraindication if effective alternative therapy is available.
Warnings: Since the drug is excreted almost entirely by glomerular filtration, renal malfunction can cause abnormally high serum levels of kanamycin which may prove ototoxic. Assess renal function periodically, both before and during therapy. Renal dysfunction or pre-renal azotemia sharply increase the risk of ototoxicity and permanent deafness. In such cases decrease the size and frequency of doses. Discontinue kanamycin and check hearing if azotemia increases. In older patients and patients receiving a total dose in excess of 15 Grams, watch carefully for signs of ototoxicity.
Precautions: If mycotic or bacterial superinfection occurs, discontinue kanamycin and initiate appropriate therapy. Cumulative ototoxic effects may be produced by concurrent or consecutive use of other ototoxic drugs. High doses may cause irritation at injection sites. The drug *should not* be physically mixed with other antimicrobials.
Adverse Reactions: Severe irreversible hearing loss may occur. Stop
therapy if tinnitus, subjective h
ing loss or high frequency loss
velop. Signs of renal irritation
appear (casts, cells, proteinuria). If
function is normal, such irritation is re
ible and is not necessarily an indication for
ping therapy. Skin eruptions have been n
rarely. To avoid neuromuscular paralysis with res
tory depression, postpone intraperitoneal instillation in
operative patients until recovery from anesthesia and muscle relax
is complete.
Dosage and Administration: The usual dose is 7.5 mg./Kg./12 h
I.M. The average adult dose is 1 Gram daily and should not exceed
Gram even in the heaviest patients. Uncomplicated infections du
sensitive organisms should respond in 24 to 48 hours. If no resp
occurs in 5 days, stop therapy and recheck the bacterial sensitiv
Hydrate patients well to minimize renal irritation. Inject deeply int
upper outer quadrant of the gluteal muscle. Discard partially used
after 48 hours.
Supplied: Rubber capped vials as a ready-to-use sterile aqueous
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Report of the Conference on Rehabilitation of the Cancer Patient

On March 5, 1970 the District of Columbia Division of the American Cancer Society held its first Conference on Rehabilitation of the Cancer Patient. Its theme might have been, "The Knife Is Not Enough," which was the title of Dr. Henry Kessler's address to the International College of Surgeons in Chicago, January 20, 1970. He stated: "It is not enough to preserve life, promote health and administer to man's many ills. One must give him something in return—not only an artificial substitute but something else. He has lost not only his leg but his heart, his amour propre, his self-respect. It is not enough to rebuild his shattered body; it is necessary to repair his broken life." He stressed the principle of the tripod, namely, (1) physical restoration, (2) vocational guidance and training, and (3) job placement.

In our Conference on Rehabilitation a panel of specialists representing various disciplines involved in rehabilitation of the cancer patient attempted to identify many of the problems in the area of rehabilitation. Among the panelists were a surgeon, chemotherapist, psychiatrist, social worker, physiatrist, nurse, and vocational rehabilitation counselor. Future panels could also logically include the dentist, the minister, the employer, the insurance representative, and the recreational therapist. Following a panel discussion in the morning, group discussions were held in the afternoon. Audience participation was encouraged in all sessions. Included in the audience were physicians, nurses, social workers, occupational therapists, physiatrists, and vocational rehabilitation counselors.

The purpose of this Conference was not to point the finger of blame at any group but rather to seek ways of providing an added dimension in care of the cancer patient. The concept of rehabilitation for the cancer patient did not confine itself to the narrow viewpoint of retraining for employment but was extended to include housewives, retired persons, and children. Special emphasis was placed on restoring self-respect and dignity to persons whose life expectancy is limited. Their final years, months, or weeks can be made pleasant and worth living with proper consideration and understanding.

It was the consensus that while the major responsibility for patient care is that of the attending physician, all other members of the team should share in this responsibility. Major emphasis was placed on the need for better communication among the members of the team, especially on the part of the physician who is the team leader.

It is our added obligation to alert the nurse, the social worker, the occupational, physical and recreational therapists, and vocational rehabilitation counselors to the extended needs of the cancer patient and the resources available to meet these needs. Many of these resources were described at the Conference, among them the following:

The District of Columbia Division of the American Cancer Society offers a wide range of services, from providing information to payment for medication. It also acts as liaison between the patient and other agencies to expedite services.

The D.C. Department of Vocational Rehabilitation is one of the most progressive in the country and can be an invaluable support in returning a patient to a full and productive life.

The Visiting Nurses Association is the medical supervisory nursing agency in the area and offers comprehensive home health care, under supervision of the attending physician. This care includes physical therapy and other rehabilitative services.

The "Where to Turn" booklet, published by the Health and Welfare Council, lists no less than 565 agencies and organizations providing services in the Washington Metropolitan Area. This booklet adds factual support to the statement that no patient in the District of Columbia need go without care.

By using the talents and expertise of the paraprofessionals to the fullest extent we can provide better care and, at the same time, give the professional personnel more time for other activities.

LaSalle D. Leffall, Jr., M.D.
Vice President, District of Columbia Division, American Cancer Society

Patients Needed for Clinical Center Study

The coöperation of physicians is requested in the referral of patients with known or suspected intestinal malabsorption secondary to nontropical sprue or Whipple's disease. Patients with malabsorption of undiagnosed cause are also of interest. Physicians interested in having their patients considered for admission to this study may write or telephone (collect) to Dr. Leonard Laster or Dr. Z. Myron Falchuk, Clinical Center, Room 9D-20, National Institutes of Health, Bethesda, Md. 20014; telephone: (301) 496-4201.

Remember when you went to Peoples in a horse and buggy to get a prescription filled? We do.

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We remember those horse-and-buggy days. Of course, many things have changed. The drug industry has come a long, long way. The skills of the prescribing physician have become much more sophisticated. But, one thing has remained constant. A pharmacist still fills every prescription—one at a time. For, the *next* prescription we fill for you is every bit as important as all 120 million that came before.

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HEALTH DEPARTMENT NOTES

Health Screening Tests

THE D.C. DEPARTMENT of Public Health has lowered the age requirement for people who wish to take advantage of health-screening tests given without charge in a mobile health unit. By moving into various areas of the city, this unit makes the health-screening tests easily accessible to the public. The tests also are offered at the Area C Health Center, 1905 E Street, S.E.

It is not the intent of the Health Department to give a complete physical examination to those who avail themselves of this service. Rather, we are hopeful that many people who would not secure or could not afford a complete physical examination in a private physician's office will take time to go through our health-screening tests. There are no income restrictions.

When the program was initiated 6 years ago the age for participation was set at 40 years or over. About a year and a half ago we lowered the age to 21 years or over for persons who go to the Area C Health Center. Last fall the mobile health unit was discontinued so that its staff could assist at D.C. General Hospital because of the need for additional personnel.

However, records showed that the number of persons taking advantage of the testing declined rapidly with the closing of the mobile unit. In February the mobile unit was reactivated and the age for participation at this facility also was lowered to 21 years and over.

At both facilities the following tests and measurements are made: visual acuity, audiometry (hearing level), blood pressure, electrocardiogram (6 leads), tonometry, examination of the head and neck for tumors or glandular abnormalities, hemoglobin, blood sugar, BUN, cervical smear, chest X-ray for tuberculosis, cardiovascular, neoplasm and other pulmonary abnormalities, serology, urinalysis, height and weight.

Based upon the patient's medical history, which is taken as the first step of the testing, an interpretation of each screening result and treatment status is made on a standard medical form. Each test result is recorded under 1 of the following 5 headings: (1) "normal," which is subdivided into "not under treatment" and "under treatment"; (2) "abnormal (referrable)," which is subdivided into "previous unknown to screenee" and "previous known—not under adequate medical man-

Bridging the Generation Gap on Drug Abuse

DISTRICT CORONER RICHARD L. WHELTON is discussing the dangers of drug abuse with the fifth-grade class of Stanton Elementary School. He is telling the youngsters that of the 32 deaths from drug addiction in the District last year, 7 of them were teenage boys and girls and all were school dropouts. The Woman's Auxiliary to the D. C. Medical Society is enlisting speakers to address elementary schoolchildren who are then given kits containing information about the use of drugs. Dr. Whelton represented the D. C. Medical Society at the Stanton School, where the first distribution of kits was made.

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agement"; (3) "abnormal (nonreferrable)," which is subdivided into "under adequate medical management" and "minor abnormality"; (4) test unsatisfactory; and (5) test not done.

Number 5 recording is necessary for the screening results record, mainly because the ECG and tonometry normally are given only to people 35 years of age or over or on referral by a physician.

Part of the medical history is devoted to the smoking status of the patient, asking whether he is a current or former smoker or never smoked. Type of tobacco used, number of cigarettes smoked per day, and how long the screenee has been smoking are determined. This is part of the Health Department's contribution to research being done by the Interagency Council on Smoking, which is urging the discontinuance and nonuse of cigarettes.

The Area C Health Center screening test facilities also are utilized by patients referred from the 8 neighborhood health centers operated by the Health Department. Each new patient registered at a neighborhood health center is given the health-screening tests.

The results of the tests are reviewed by a Health Department physician. If the tests are normal the patient is sent a letter advising him of the results. If the tests suggest the need for further medical assistance, the patient is advised to contact his physician, and a copy of the test results is sent to the physician designated by the patient.

Tests are given by appointment at both the mobile unit and Area C Health Center. They take less than an hour. Appointments can be made for either facility by calling 626-7248.

We are urging every adult in the District of Columbia to go to his private physician for an annual physical examination or to have the health-screening test annually. Our primary interest is to detect medical problems which may be treated by the private physician or other medical sources before they become more complicated.

Raymond L. Standard, M.D., M.P.H.
D. C. Director of Public Health

Research Support Applications Invited by Heart Association

Research investigators may now apply to the American Heart Association for support of studies to be conducted during the fiscal year beginning July 1, 1971.

September 15, 1970 is the deadline for submitting applications for Established Investigatorships, British-American Research Fellowships, and foreign Visiting Scientist Awards. Applications for Grants-in-Aid are due no later than November 1, 1970.

Established Investigatorships: Five-year awards to scientists who are able to conduct independent research. Stipends begin at $13,000, with fringe benefits and $1,000 yearly increments.

British-American Research Fellowships: One-year training awards to U.S. citizens, usually with 2 years of postdoctoral research experience at time of application, to work in a qualified institution in Great Britain. Stipend, $9,000, plus dependency and travel allowances. Departmental grant, $750.

Visiting Scientist Awards: Given for 3- to 12-month periods, enabling American investigators to invite experienced foreign scientists to the United States for research collaboration. Stipend, comparable to position at host institution, and travel expense. Application must be initiated by U.S. host scientist. Although the primary deadline is September 15, 1970, additional applications will be received until December 31, 1970, subject to the availability of funds.

Grants-in-Aid: To nonprofit institutions in direct support of a particular investigator for a specific program of research under his direction. Awards are in support of research in the cardiovascular field or basic sciences for periods up to 3 years. Application deadline is November 1, 1970.

Application forms may be obtained from the Research Department, American Heart Association, 44 East 23rd Street, New York, N. Y. 10010.

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All Mudranes are bronchodilator-mucolytic in action, and are indicated for symptomatic relief of bronchial asthma, emphysema, bronchiectasis and chronic bronchitis. **MUDRANE tablets** contain 195 mg. potassium iodide; 130 mg. aminophylline; 21 mg. phenobarbital (Warning: may be habit-forming); 16 mg. ephedrine HCl. **Dosage** is one tablet with full glass of water, 3 or 4 times a day. **Precautions** are those for aminophylline-phenobarbital-ephedrine combinaations. **Iodide side-effects:** May cause nausea. Very long use may cause goiter. Discontinue if symptoms of iodism develop. **Iodide contraindications:** Tuberculosis; pregnancy (to protect the fetus against possible depression of thyroid activity). **MUDRANE-2 tablets** contain 195 mg. potassium iodide; 130 mg. aminophylline. **Dosage** is one tablet with full glass of water, 3 or 4 times a day. **Precautions** are those for aminophylline. **Iodide side-effects and contraindications are listed above. MUDRANE GG tablets** contain 100 mg. glyceryl guaiacolate; 130 mg. aminophylline; 21 mg. phenobarbital (Warning: may be habit-forming); 16 mg. ephedrine HCl. **Dosage** is one tablet with full glass of water, 3 or 4 times a day. **Precautions** are those for aminophylline-phenobarbital-ephedrine combinations. **MUDRANE GG-2 tablets** contain 100 mg. glyceryl guaiacolate; 130 mg. aminophylline. **Dosage** is one tablet with full glass of water, 3 or 4 times a day. **Precautions:** Those for aminophylline. **MUDRANE GG Elixir.** Each teaspoonful (5 cc) contains 26 mg. glyceryl guaiacolate; 20 mg. theophylline; 5.4 mg. phenobarbital (Warning: may be habit-forming); 4 mg. ephedrine HCl. **Dosage:** Children, 1 cc for each 10 lbs. of body weight; one teaspoonful (5 cc) for a 50 lb. child. Dose may be repeated 3 or 4 times a day. Adult, one tablespoonful, 4 times daily. All doses should be followed with ½ to full glass of water. **Precautions:** See those listed above for Mudrane GG tablets.

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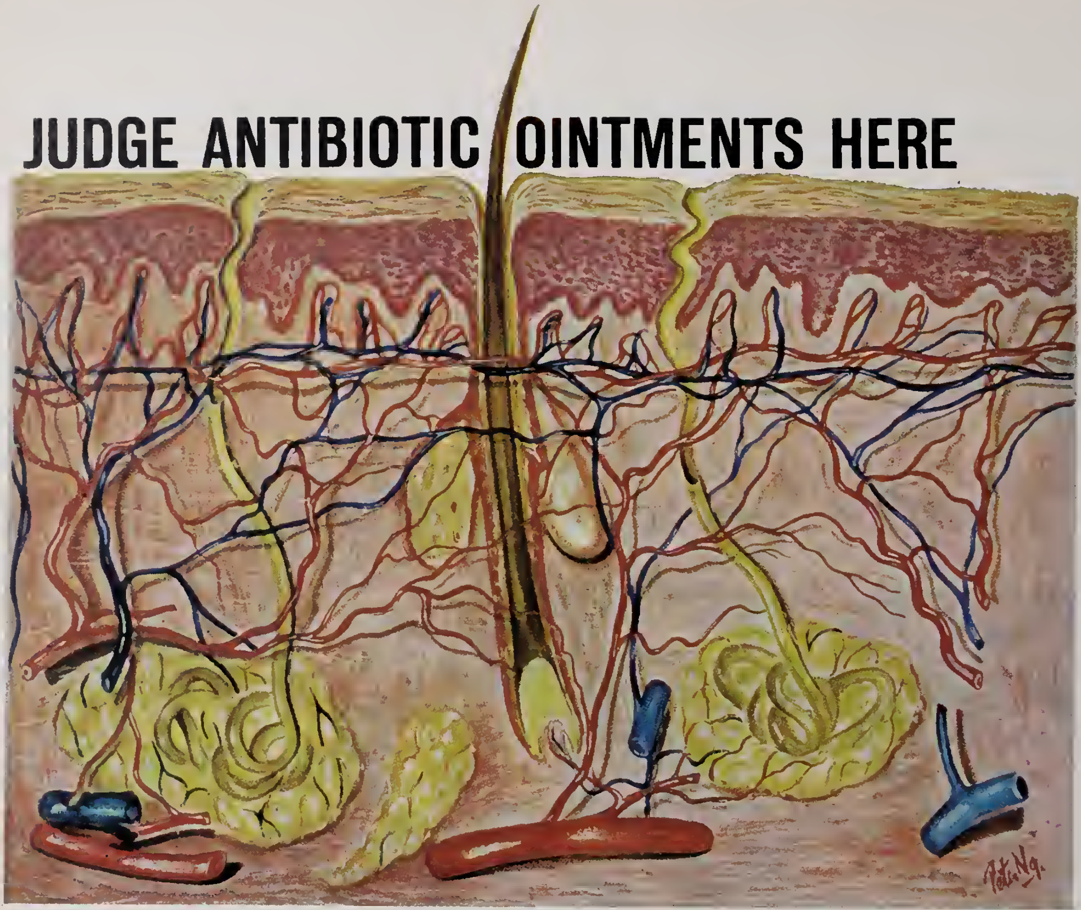

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No in vitro test can duplicate a clinical situation on living skin. 'Neosporin' (polymyxin B – bacitracin – neomycin) Ointment has consistently proven its effectiveness in thousands of cases of bacterial skin infection. The spectra of the three antibiotics overlap in such a way as to provide bactericidal action against most pathogenic bacteria likely to be found topically. Diffusion of the antibiotics from the special petrolatum base is rapid since they are insoluble in the petrolatum, but readily soluble in tissue fluids. The Ointment is bland and nonirritating.

Caution: As with other antibiotic preparations, prolonged use may result in overgrowth of nonsusceptible organisms and/or fungi. Appropriate measures should be taken if this occurs. Articles in the current medical literature indicate an increase in the prevalence of persons allergic to neomycin. The possibility of such a reaction should be borne in mind.
Contraindications: This product is contraindicated in those individuals who have shown hypersensitivity to any of its components.
Supplied: Tubes of 1 oz., ½ oz. with applicator tip, and ⅛ oz. with ophthalmic tip.
Complete literature available on request from Professional Services Dept. PML.

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Georgetown Sharply Expands Medical School Enrollment

A GRANT of more than $8,500,000 to Georgetown University from the Department of Health, Education, and Welfare will be used under the recently inaugurated Federal Physicians Augmentation Program to help relieve the critical health manpower shortage.

Details on how the expanded enrollment will be accomplished, along with a "new look" in curriculum, were outlined by Dr. John C. Rose, Dean of the School of Medicine, in an April news release.

The 1965 Master Plan of the Medical School called for an increased enrollment of the freshman class from 121 to 133 in the fall of 1970 and to 145 in the fall of 1971. However, recognizing the critical physician manpower problem, the Dean and the medical school faculty are planning for a freshman class enrollment of 175 in the fall of 1970 and 205 in the fall of 1971.

By 1974, under the Physicians Augmentation Program (PAP), the total enrollment of the School of Medicine will be 820 compared to the current enrollment of 467.

Initially, Georgetown will receive $680,000 from the PAP program for the fiscal year beginning July 1, 1970. Then July 1, 1971, the School is to receive approximately $1.3 million; the third year, $1.8 million; the fourth year, over $2.4 million; and the final year, nearly $2.6 million.

Under the new curriculum medical students will see patients during their first weeks of school and have free time for self-development. Currently, students do not come in contact with actual patients until the end of their second year.

The Georgetown medical student will have 2 "free periods" each semester in his freshman and sophomore years, giving him "a chance to pursue his own interests away from the confines of the classroom." Also, for the first time, the curriculum will include 2 elective courses each semester.

The increased enrollment, and the enlarged faculty necessitated by it, will immediately fill the new basic sciences building and library, both of which will be ready for use by the fall of 1970.

The entire fourth year of medical school will be served in 3 12-week electives, one of which is required to be an inpatient hospital service while one must be in an ambulatory health service.

Georgetown is affiliated with District of Columbia General, Veterans Administration, and Arlington (Va.) Hospitals. Affiliations also exist with several other hospitals in the Washington area for teaching students.

To accommodate the initial increase of 54 students this fall, new faculty members will have to be added immediately to both the basic sciences and clinical staffs. More will be added later as the School increases in size.

Memorandum on Injections of Cholera Vaccine

THE FOREIGN QUARANTINE PROGRAM* has received occasional complaints that quarantine officials in other countries have refused to honor International Certificates of Vaccination against cholera when only 1 injection has been given.

The International Sanitary Regulations, which are, in effect, a treaty binding signatory nations, state: "Any standard for anticholera vaccines in force in the territory where the vaccination is performed shall be accepted by all health administrations" (Article 61, paragraph 2). Further: "Each health administration has the right to decide whether 2 injections of vaccine shall be given or whether 1 injection is sufficient. However, it is not for any country to require that the standard for anticholera vaccination in another country shall be 2 injections of vaccine" (Appendix 2, note [4]).

The Public Health Service Advisory Committee on Immunization Practice has stated: "For travelers vaccinated in the United States, a single 0.5 ml. dose of cholera vaccine is considered adequate to satisfy the International Sanitary Regulations. The single dose for children is proportionately smaller."

With specific relation to Japan, a Cholera Certificate would be required if one arrives (within 5 days) in that country from countries currently having infected areas: Burma, India, Indonesia, Malaysia, Nepal, Pakistan (East), Philippines, and Vietnam. Japanese quarantine authorities have reassured our Embassy in Tokyo that our standard will be accepted.

Whenever quarantine authorities abroad or at U.S. ports of entry take actions which appear to the traveler unwarranted, exact details are needed. Obtain the traveler's name and address, the countries he visited prior to the incident, the exact details of the incident, and the exact place, day, and time. These will permit us to make a specific complaint, and the country to take any appropriate action if there is misinterpretation of policy at the local level.

JAMES W. MOSLEY, M.D.
Chief, Epidemiology and Research
Analysis Branch, Foreign Quarantine Program

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* Address: National Communicable Disease Center, Atlanta, Ga. 30333.

Hospital Admission for the Alcohol-dependent Patient

The AMA Committee on Alcoholism and the Council on Mental Health have approved guidelines for the admission of alcohol-dependent patients to general hospitals. These guidelines reaffirm AMA's continuing concern for medical needs of these patients.[1]

1. A patient who is diagnosed as "alcoholic" by a physician or who is so known by the hospital or by other responsible agencies and individuals should be admitted under the following circumstances:

a. He has an infectious disease.
b. He has hyperthermia.
c. He has a history of convulsions, or a poorly controlled convulsive disorder, and has been drinking.
d. He is hemorrhaging or unconscious.
e. He wants to be withdrawn from alcohol, either for the first time or after having relapsed to drinking.
f. He has a disulfiram-alcohol reaction.

2. A person should be admitted to a hospital whether under the tentative diagnosis of alcoholism, or as a known alcoholic patient, as the case may be, when one or more of the following conditions prevail:

a. He is unconscious and has been drinking.
b. He is agitated and tremulous to the extent of indicating an acute withdrawal syndrome.
c. He has convulsions, hallucinations, or delirium tremens, manifesting a complicated withdrawing state.
d. He is suffering from a disease recognized as related to alcoholism (e.g., cirrhosis, neuropathy, pancreatitis) and wishes to be withdrawn from alcohol.
e. He has a disease or post-traumatic injury usually not requiring hospitalization but also has a history of prolonged drinking or of heavy ingestion of alcohol immediately prior to the illness.

The psychiatric unit, rather than the general medical service, or psychiatric consultation should be considered in one or more of the following circumstances:

1. The patient is overtly psychotic.

2. The patient is so severely depressed that he is probably suicidal.

3. The patient represents a serious management problem because he is extremely confused or has other behavioral difficulties that cannot be adequately managed on a medical or surgical service.

As with any patient, the alcohol-dependent patient should be discharged from the hospital as soon as such discharge is medically indicated. In each instance, however, appropriate plans should be made prior to discharge for continuing aftercare at the hospital or by a private physician or, as frequently will be required, for psychological and social rehabilitation by public and voluntary agencies.

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[1] J.A.M.A., 1969, **210**, 121.

Physician Shift from D. C. to Suburbs

Between 1963 and 1970 there was an increase of 59 per cent in the number of physicians practicing in the Metropolitan Washington Area. This increase was brought about by the addition of 1,723 new practicing physicians in the area during this period. Physicians practicing within Federal institutions and agencies are not included in the statistics.

These findings are part of a study soon to be published by the Health Facilities Planning Council on physician manpower in the Metropolitan Area. The Council published a similar study in 1965. The present study indicates the degree and direction of change in the distribution of physicians during the intervening years.

In the 1965 study, the number of physicians located in the Northwest Section of the District of Columbia represented 50 per cent of the total physician population of the Metropolitan Area. Since that time the shift has been toward the suburbs. The present study shows that well over 50 per cent of the area's physicians are now in the suburbs. Montgomery County showed the greatest increase of any suburban jurisdiction, with its percentage of area physicians rising from 18 to 26 per cent.

The new study also indicates that the trend is toward medical specialization throughout the Metropolitan Area. The percentage of general practitioners has dropped from almost 25 per cent in 1965 to less than 15 per cent at present. —*Council Comments*, March 1970.

DOCPAC BRIEFS

Be a Party Leader

Physicians and their wives will be infinitely more effective in politics through the holding of party office than through election to public office. Party leadership is not difficult to attain. Both parties are undermanned and always have been. If you prove you're serious, prepared to work, and willing to play the game according to the established rules, you can rise quickly, for both parties want men and women with intelligence, training, and influence within the community. Physicians and their wives will find the welcome mat on the doorstep.

To underline this point, surveys have shown in recent years that only about 1 in 10 voters actually works at politics by going to meetings, working for a party, or giving money to a campaign. Only about 2 per cent belong to any sort of political organization. And only about a fourth of the American public say that they are likely to talk about political matters—even casually—with other people.

How can physicians and their wives help fill the partial vacuum created by the apathy of so many Americans, and, in the process, make their influence felt quickly and strongly?

1. Register and vote religiously in the primaries.
2. Join either political party as soon as possible.
3. Study your state's election laws, and your party's regulations.
4. Develop a voice in the nominating process so that your party chooses candidates better representative of your thinking.
5. Work as a member of your candidate committee.
6. It is vital to provide generous financial support to good candidates—and your party, too.
7. Become involved in your local District of Columbia Political Action Committee.

Send your dues to DOCPAC, 825 New Hampshire Avenue, N.W., Washington, D.C. 20007. Individual membership is $20.00; family membership (including wife and children), $30.00.

William H. Cooper, M.D.
Chairman, D. C. Political
Action Committee

Referral Patients Wanted at WHC

The Endocrine Section of the Washington Hospital Center, in collaboration with the Mineral Metabolism Branch, N.I.A.M.D., has initiated a long-range study to test the effect of phosphate supplements on bone density in osteoporosis. Density of bone will be followed by means of a new instrument which will allow sequential measurements of bone density to be made with less inconvenience to the patient than an X-ray film but with a high degree of accuracy. Osteoporosis of the postmenopausal or idiopathic variety will be studied initially; later, other forms such as steroid or disuse osteoporosis will be studied.

The following are criteria for entry:

1. No other major medical illness, i.e., renal disease, cancer, diabetes.
2. Age between 45–65 years. No sex limitation.
3. No hormonal therapy for 2 months preceding entry.
4. No vitamin D therapy for 1 year preceding entry.

Any medical problems developing during the study will be immediately referred to the private physician, who will be informed of the progress of the study. The patient will receive careful dietary instructions and will attend a Tuesday a.m. Clinic at the Washington Hospital Center.

For referrals to this study and for further information, please contact Dr. Jay R. Shapiro or Dr. W Tabb Moore, Endocrine Section, WHC, telephone (202) 541-6325.

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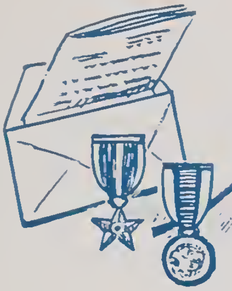

News & Personals

Summary of Executive Board Actions

Proceedings of April 27 Meeting

Dinner for the Board members was served in the Exhibit Hall of the Medical Society. Dr. Robert J. Coffey presided at the meeting that followed which was attended by Drs. Frank S. Pellegrini, Marvin C. Korengold, Howard Katzman, James E. Boland, Frank S. Bacon, John J. Hughes, C. Willard Camalier, Jr., and Mr. Thomas Sadler, Secretary.

The minutes of the March 23 meeting were approved.

Committee Meetings: The Secretary reported the following committees had met since the last meeting of the Board:

March	23	Committee on Public Welfare
	23	Program Committee, Scientific Assembly
	24	Committee on Public Information and Education
	25	Committee on Mental Health
	25	Committee on Constitution and By-laws
	25	Traffic Committee
	26	Committee on Ruffin and Other Bequest Funds
	31	Interdisciplinary Committee on Drug Dependency
April	1	Fee Review Committee
	1	Committee on Medical Aspects of Sports
	2	Committee on Physician Placement
	6	Program Committee, Scientific Assembly
	8	Committee on Medicolegal Problems
	9	Committee on Child Welfare
	10	Committee on Emergency Medical Service
	14	Board of Credentials
	15	Legislative Committee
	16	Breast Cancer Study Committee
	16	Committee on Medicine and Religion
	17	Finance Committee
	17	Utilization Committee
	17	Committee on Blood Banks
	20	Committee on Occupational Health
	21	Grievance Committee
	21	Legislative Subcommittee
	22	Committee on Constitution and By-laws
	23	Committee on Insurance
	23	Committee on Medical Aspects of Sports
	24	Public Welfare Committee
	25	Committee on Environmental Health

Board of Credentials: On recommendation of the Board of Credentials, 3 applicants were elected to Active, 2 to Associate, and 1 to Resident-Intern membership. Their names appear on page 346. Approval was given to the following changes in membership status:

Transfers

Active to Associate: Simon Leo Auster and Nelson Gates Goodman

Active to Special: James H. P. Garnett

Associate to Active: Jay R. Shapiro

Resignations

Active: James T. Estes, Seymour Rabinowitz, and James A. Ryan

Associate: Allan Z. Schwartzberg

Council on Medical Specialties: Dr. C. A. Albert, in his letter of February 16, 1970, proposed the establishment of a Council on Medical Specialties. Dr. Katzman approved the request, stating that such a Council is needed to serve as an advisory group to the Executive Board. After expressions of opinion from various members of the Board, a motion was made and carried that the Board instruct the President to appoint an Ad Hoc Council on Medical Specialties consisting of the chairman of each Section or his designee; that a temporary chairman of this Council be appointed; that the Council be asked to meet quarterly; and that permanent establishment of such a Council be presented to the membership for approval at the 1970 Annual Business Meeting. There was 1 negative vote.

New Sections of the Society: Dr. Coffey reported that under consideration by the Board at this meeting were requests to establish 7 new Sections and to reactivate 1 Section. After some discussion preliminary procedures to establish the following Sections were approved: Hematology, Cardiology, Arthritis and Rheumatic Diseases, Clinical Oncology, Endocrinology, Pulmonary Disease, and Nephrology, and to reactivate the Section on Gastroenterology. However, such approval was given on a temporary basis. The requests for new Sections will be submitted to the membership for vote at its 1970 Annual Business Meeting together with a revision of the by-laws incorporating these additional sections.

Relative Value Study Committee: A motion was made and carried to accept the changes in the Relative Value Scale recommended by the Committee. Copies of the changes are available upon request to the Executive Offices of the Society.

Suspension of Members: The Board voted that Dr. Marino J. Maturo and Dr. Luigi P. Vecchiarello be suspended from all membership privileges in the D.C. Medical Society until such time as the courts have disposed of their cases.

Finance Committee: The minutes of the April 17, 1970 meeting of the Finance Committee were approved as submitted. The Auditor's Report for fiscal 1969 was also accepted.

Regional Medical Program: The report on RMP activities as submitted by Dr. Arthur E. Wentz, Coördinator, was accepted.

Committee on Public Welfare: The following recommendations of this Committee were approved:

1. That the Medical Society urge its members to volunteer assistance to the D.C. Health Department in the physical examination of 9,000 area children during the months of May through September.
2. That members of the Medical Society be urged again to participate in the Medicaid program.
3. That the Medical Society give strong support toward more adequate funding of the Health Department at the Congressional level.

Interdisciplinary Committee on Drug Abuse: Approval was given to the recommendation of this Committee that the Medical Society help to obtain physician volunteers for examining patients at drug addiction treatment centers.

Subcommittee on Abortion: Dr. Pellegrini reviewed for the Board the work of this Committee. He stated that 1,204 responses had been received from approximately 2,300 members polled. Of the 1,200 responding, 76 per cent favored position B (liberalized policy—see May ANNALS, page 286). After studying the responses to the survey the Board voted in favor of the concluding statement of the Subcommittee on Abortion:

"The subject has been given extensive study by the Medical Society, and the membership was given an opportunity to express itself. The results of this study should be made available to any proper authority for use if necessary. However, because of the sensitivity of the issue, the Society does not accept this or any other stand as a policy, since it cannot and should not speak for all members."

Disclaimer for Radio and TV Appearances: The Board voted that a disclaimer should be prepared and distributed to radio and television stations regarding the appearance of Society members on TV and radio.

Other Business

1. Board members were provided material from the AMA's Committee on Private Practice which proposed definitions of "private practice" and "semi-private practice" and described the functions of the Committee. After Dr. Camalier had spoken briefly on this matter, the Board voted to accept the material at this time for information only.

2. Dr. Camalier also made available to the Board a copy of the summary of the provisions proposed by the AMA entitled: "To Provide for Medical and Hospital Care Through Voluntary Health Insurance Financed in Whole or in Part by Income Tax Credits."

There being no further business, the meeting was adjourned at 9:30 p.m.

►GENERAL NEWS

The American College of Surgeons invites all doctors of medicine to a 19-day scientific winter cruise, January 2–21, 1971, on the *S. S. Rotterdam*, combining shipboard sessions with sectional meetings in Panama City, Caracas, and San Juan. The meetings will be held at hotels in those cities but members of the cruise will live aboardship in the several ports. Program participants will include outstanding surgeons from many countries and the host chapters. There is no registration fee for the San Juan meeting. A fee of $10.00 will be charged all registrants for the Caracas and Panama meetings.

Reservations should be made as quickly as possible for stateroom accommodations with the agent for the liner, Thomas McGuire, 230 North Michigan Avenue, Chicago, Ill. 60601; telephone (312)

372-8302. Rate sheets and deck plan of the ship will be sent immediately. Program information may be obtained from the American College of Surgeons, 55 East Erie Street, Chicago, Ill. 60611; telephone (312) 664-4050.

The Washington Psychiatric Society elected the following officers at its March dinner meeting:

Dr. Robert B. Neu, *President-elect*; Dr. Edward I. Kushner, *Secretary*; and Dr. Jesse Rubin, *Treasurer*.

Dr. William D. Kehne has taken office as President of the Society. Drs. Francis Barnes and William Tompkins were elected Councillors for a 2-year term.

Dr. William F. Peterson is the new full-time Chairman of the Department of Obstetrics and Gynecology at the Washington Hospital Center. A retired Colonel, he was previously Chairman of the Department of Obstetrics and Gynecology at Malcolm Grow U.S. Air Force Medical Center. He graduated from New York Medical College in 1946, trained in gynecology at Johns Hopkins Hospital in 1954, and did postgraduate work in cytology at Massachusetts General Hospital in 1955. Dr. Peterson is a diplomate of the American Board of Obstetrics and Gynecology, a Fellow of both the American College of Surgeons and the American College of Obstetricians and Gynecologists, and is a member of many other professional organizations.

Members of the Medical Society's **Past Presidents Club** were entertained at the home of Dr. and Mrs. A. Magruder MacDonald, 5115 Lowell Lane, N.W., April 30. Co-hosts at a sumptuous cocktail-buffet were Drs. Raymond T. Holden and William M. Ballinger and their wives.

Present for the pleasant occasion were Past Presidents Victor R. Alfaro, Ralph M. Caulk, Robert J. Coffey, J. Spencer Dryden, W. LeRoy Dunn, William P. Herbst, William S. McCune, Preston A. McLendon, W. Ross Morris, Edward W. Nicklas, Fred R. Sanderson, Donald Stubbs, James W. Watts, Paul R. Wilner, Wallace M. Yater; also Dr. Frank S. Pellegrini and Dr. Marvin C. Korengold, President and President-elect, respectively, of the Society; Mr. Theodore Wiprud, long-time Secretary of the Society, now retired; and Mr. Warren Magee, the Society's legal counsel.

The George Washington University Medical Center dedicated its new emergency care unit, located on the Washington Circle side of the University Hospital, on April 15. The unit represents the acute care facet of what will become a Community Care Center.

The Center will be under the direction of Dr. Thomas E. Piemme, who heads the new Division of General Medicine. The physicians and staff will be able to care for more than 30,000 patients annually in the expanded unit. The resources include a cardiac monitoring system, a 7-bed observation section, a quiet room for psychiatric emergencies, X-ray equipment, and a clinical laboratory. Medical emergencies, such as stroke, heart attack or trauma, will be handled through the emergency unit. Patients with less acute medical and surgical conditions will continue to be seen by physicians at the University Clinic or referred to their private physicians.

Dr. Piemme, Director of Division of General Medicine at George Washington and head of its new Community Care Center

Dr. Thomas C. Chalmers has been appointed **Associate Director for Clinical Care** of the National Institutes of Health **and Director of the Clinical Center** in Bethesda, Md. At the time of his appointment he was Assistant Chief Medical Director for Research and Education of the Veterans Administration. He succeeds Dr. Jack Masur, who died last year.

Dr. Chalmers attended Yale University and received his medical degree from Columbia College of Physicians and Surgeons in 1943. He was Chief of Medical Services at Lemuel Shattuck Hospital, Boston, from 1955 to 1968. He was on the faculty at Harvard Medical School during much of that period and was Professor of Medicine at Tufts University School of Medicine. He was recently appointed Professor of Medicine at George Washington University School of Medicine.

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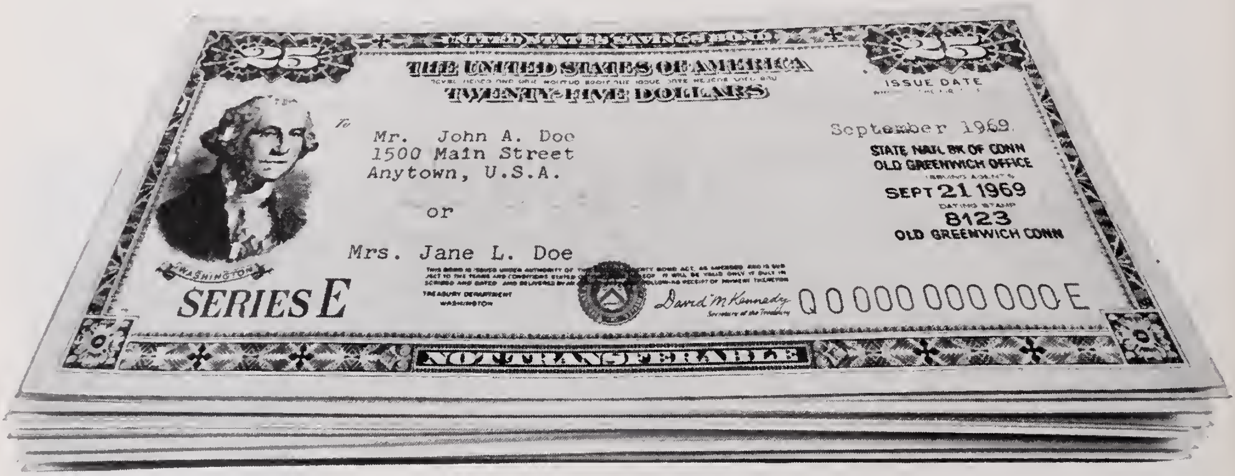

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After only one year:

Administered to more people than live in Alexandria and Silver Spring.*

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Alexandria

Injectable Garamycin®
brand of
gentamicin sulfate injection

*An estimated 208,000 patients have received GARAMYCIN Injectable to date. The combined population of Alexandria, Va., and Silver Spring, Md., is 199,500. (Estimated 1969 figures from The New York Times Encyclopedic Almanac 1970.)

See Clinical Considerations section on last page . . .

Mounting acceptance in the hospital...

Proven clinical effectiveness

Respiratory Infections

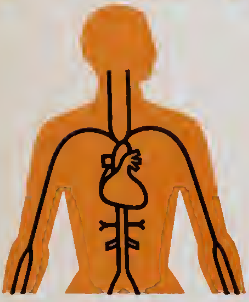
Outstanding results in serious gram-negative respiratory infections[1,2]

GARAMYCIN Injectable may prove successful where other antibiotics have failed.

Urinary Tract Infections

Strikingly effective in selected urinary tract infections[3]

With relatively low intramuscular doses, the promptly attained levels of GARAMYCIN achieved in the urine are considerably higher than the concentrations required for effectiveness against virtually all susceptible gram-negative pathogens. (Appropriate precautions are indicated in patients with impaired renal function; consult Package Insert for full details.)



Septicemia

May be lifesaving[4-6]

Numerous investigators have drawn attention to the value of GARAMYCIN Injectable in the treatment of gram-negative septicemias, often complicated by shock. Many hospital strains of *Serratia* are susceptible.[6]

Wounds and Burns

Response may be dramatic in wounds and burns complicated by sepsis[7]

The established efficacy of GARAMYCIN Injectable against *Pseudomonas*—as well as most other gram-negative pathogens—makes it an especially useful agent in the treatment of infected wounds and burns.

Important Precautionary Note Patients receiving treatment with GARAMYCIN Injectable (gentamicin sulfate injection) should be under close clinical observation because of the toxicity associated with the use of the drug. Ototoxicity, vestibular and auditory, can occur in patients, primarily those with preexisting renal damage, treated with GARAMYCIN Injectable for longer periods or with higher doses than recommended.

GARAMYCIN Injectable is potentially nephrotoxic, and this should be kept in mind when it is used in patients with preexisting renal damage.

This drug should be limited to the treatment of serious infections caused by susceptible gram-negative bacteria, with due regard for relative antibiotic toxicity. (See Clinical Considerations section.)

Mounting evidence in the laboratory...

Schering

Over 95% gram-negative pathogens sensitive.*

No other antibiotic performed comparably *in vitro* against gram-negative pathogens.
n a nationwide culture audit of antibiotic sensitivity patterns, sensitivity reports from 106 hospitals, geographically representative by census tract and of varying sizes, were analyzed. During the three-month period, ***every*** gram-negative culture slip from ***every*** hospital was surveyed. The total number of cultures involved in the audit was 97,091. The total number of sensitivity determinations was 643,503.

	Antibiotics*							
	Percentage of sensitive strains Number of strains tested							
Pathogens	**Garamycin**	**Kanamycin**	**Cephalothin**	**Cephaloridine**	**Ampicillin**	**Colistimethate**	**Chloramphenicol**	**Tetracycline**
Klebsiella pneumoniae	99.5% 962	84.7% 992	86.2% 995	76.1% 67	32.7% 1,020	96.3% 640	82.9% 1,028	77.1% 1,026
Aerobacter aerogenes	95.9% 2,739	86.1% 2,818	53.5% 2,985	58.8% 1,514	22.7% 3,066	88.6% 2,603	85.8% 3,071	67.8% 2,981
Klebsiella aerobacter group	98.8% 566	83.9% 547	66.1% 522	60.5% 276	28.0% 553	89.5% 560	86.2% 587	62.8% 433
Klebsiella, all others	92.7% 2,944	83.3% 3,186	77.4% 2,976	67.5% 627	13.5% 2,883	95.0% 2,105	81.6% 3,212	70.6% 3,063
Pseudomonas aeruginosa	91.6% 4,528	29.8% 4,460	6.6% 4,418	6.6% 1,279	6.0% 4,360	91.3% 3,852	26.9% 4,608	26.4% 4,404
Proteus, indole-positive	91.8% 1,031	85.8% 1,062	39.9% 981	54.1% 364	40.2% 1,042	10.3% 758	76.1% 1,096	42.1% 1,051
Proteus mirabilis, indole-negative	94.9% 3,272	90.1% 3,378	83.1% 3,290	77.5% 975	78.0% 3,274	8.8% 2,634	85.9% 3,469	26.8% 3,278
Proteus, unspecified	96.2% 1,335	85.8% 1,371	71.7% 1,434	70.0% 647	64.7% 1,435	11.2% 1,233	76.0% 1,421	22.4% 1,298
Escherichia coli and all other Escherichias	96.4% 12,557	91.4% 12,818	87.8% 12,686	88.8% 4,251	74.6% 12,899	95.4% 10,623	94.1% 13,086	70.0% 12,559
Paracolobactrum, all	93.4% 303	88.9% 325	62.0% 305	74.2% 62	43.8% 340	80.9% 215	87.1% 350	72.6% 340
Coliform bacteria	99.0% 593	91.2% 649	81.5% 637	66.7% 21	52.7% 624	95.6% 607	91.6% 678	76.1% 637
Totals	95.1% 30,830	80.5% 31,606	65.3% 31,229	68.1% 10,083	50.3% 31,496	75.8% 25,829	79.7% 32,606	56.5% 31,070
Gram-positive (Included for consistency with Package Insert, not an approved indication)								
Staph—S. aureus, coagulase-positive	97.4% 1,548	88.8% 1,458	97.7% 2,050	98.7% 636	61.1% 1,559	20.4% 628	94.4% 2,123	83.7% 1,966
Staph—S. aureus, unspecified	99.3% 993	92.8% 902	98.1% 1,289	95.3% 213	45.8% 1,153	29.3% 116	96.4% 1,427	82.3% 1,360

*Adapted from a three-month, nationwide hospital audit by R. A. Gosselin and Co., Inc., Dedham, Massachusetts (mid-May to mid-August, 1969).[8]
Antibiotics with significant gram-negative spectra are included. Organisms are listed as reported by laboratory.
Sensitivity testing was done by the disc method, a generally reliable test in the hospital setting. It should be noted, however, that the results with GARAMYCIN were somewhat higher than the results reported where the tube dilution technique was used. (See Clinical Considerations section which follows.) The concentration of the GARAMYCIN disc was 10 mcg.
Whereas standard testing methods were used by all hospitals, it is acknowledged that in a survey of this kind considerations such as differences in methodology are possible sources of error. The comparative percentage-sensitivity results derived from a survey of this kind are, therefore, not absolute. One should keep in mind also that the proper selection of an antibiotic is based not only on susceptibility testing but on relative toxicity and other clinical considerations as well.
It is felt, nonetheless, that the broad scope of the survey and the extreme care in data collection and tabulation permit a conclusion that the results are *generally* representative of current nationwide antibiotic sensitivity patterns.

Injectable
Garamycin®
brand of
gentamicin sulfate injection

See Clinical Considerations section on last page...

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ADULT DOSAGE GUIDELINES

See definitive prescribing information in Package Insert.

Patients with Normal Renal Function

Total Daily Dose (administered in two, three, or four divided doses)			
	Less Severe	**Resistant/ Moderately Severe**	**Serious/Life-Threatening**
Urinary Tract Infections (due to susceptible strains of gram-negative bacteria)†	0.8-1.2 mg./kg. for 7-10 days	Larger doses or additional antibacterial therapy should be considered in severe urinary tract infections or in resistant cases involving the renal parenchyma or anatomic anomaly.	up to 5 mg./kg.
Other Infections including bacteremia, infected surgical wounds, severe soft tissue infections, and respiratory tract infections (due to susceptible strains of gram-negative bacteria)	3 mg./kg. for 7-10 days		

†Alkalinization of the urine may be a useful therapeutic adjunct.

Patients with Impaired Renal Function

To minimize the risk of ototoxicity in patients with impaired kidney function, only the first dose should be that normally recommended. Each subsequent dose should be half or less of that recommended for patients with normal renal function, depending upon the degree of renal impairment.

In patients with renal failure who are undergoing 14-hour hemodialysis twice weekly, administration of 1 mg./kg. GARAMYCIN Injectable at the end of each dialysis period has been suggested.

Clinical Considerations

Indications: Garamycin Injectable is clinically effective in infections due to susceptible strains of gram-negative bacteria, including *Pseudomonas aeruginosa*, and species of indole-positive and indole-negative *Proteus*, *Escherichia coli*, and *Klebsiella-Aerobacter*. Bacteriologic studies should be conducted to identify the causative organism and to determine its sensitivity to gentamicin sulfate. Sensitivity discs of the drug are available for this purpose. If the susceptibility tests indicate that the causative organism is resistant to gentamicin sulfate, other appropriate antibiotic therapy should be instituted.

IN VITRO INHIBITION OF CLINICALLY IMPORTANT BACTERIA BY GENTAMICIN SULFATE (TUBE DILUTION STUDIES)

BACTERIA	No. of Strains Tested	No. of Strains (%) Inhibited by: 4 mcg./cc. or less		8 mcg./cc. or less*		No. of *In Vitro* Studies
Staphylococcus aureus	1,210	1,200	(99%)	1,206	(99%)	11
Pseudomonas aeruginosa	885	771	(87%)	828	(93%)	16
Escherichia coli	836	736	(88%)	779	(93%)	11
Indole-positive and indole-negative *Proteus* species	477	210	(44%)	358	(75%)	12
Klebsiella-Aerobacter species	292	205	(70%)	231	(79%)	10

*Number of strains (%) of gram-negative bacteria inhibited by 10 mcg./cc. or less are as follows: *Pseudomonas aeruginosa*, 828 (93%); *Escherichia coli*, 792 (95%); *Proteus* species, 393 (82%); *Klebsiella-Aerobacter* species, 284 (97%). From same studies as above.
Source: Package Insert

This drug should be limited to the treatment of serious infections caused by gram-negative bacteria, particularly *Pseudomonas aeruginosa, Proteus* and other susceptible organisms, with due regard for relative antibiotic toxicity. Therefore, the drug should be considered for use against gram-negative: 1. Bacteremia; 2. Infected surgical wounds; 3. Severe soft tissue infections, including burns complicated by sepsis; 4. Respiratory tract infections; and 5. Selected cases of urinary tract infection.

Contraindications: Garamycin Injectable is contraindicated in individuals with a history of hypersensitivity or toxic reactions to gentamicin.

Schering

Warnings: Patients receiving treatment with GARAMYCIN should be under close clinical observation because of the toxicity associated with the use of this drug. Ototoxicity, vestibular and auditory, can occur in patients, primarily those w pre-existing renal damage, treated with GARAMYCIN Injectal usually for longer periods or with higher doses than recommend

GARAMYCIN Injectable is potentially nephrotoxic, and tl should be kept in mind when it is used in patients with pre-existi renal impairment. Kidney function diminished by infection of t upper urinary tract may, however, improve during effective tre ment with Garamycin Injectable.

Concurrent administration of potentially ototoxic drugs such streptomycin and kanamycin or of potentially nephrotoxic dru such as polymyxin, colistin, and kanamycin with gentamicin sulf has not been shown to afford any clinical advantages and, moreo may result in additive toxicity. Monitoring of vestibular, cochle and renal function will provide guidance for therapy in such cas

Precautions: In patients with impaired renal function in wh serious infection develops, serum concentrations of the drug m rise, with consequently increased risk of ototoxicity. In these tients or in those in whom recommended dosage or duration therapy must be exceeded as a life-saving measure, routine stud of kidney function should be performed when possible. These m be supplemented by evaluation of the vestibular and auditory fu tion and measurement of serum concentration of the drug wh feasible. Serum concentrations of gentamicin should be maintain below the range of 10-12 mcg./ml. to reduce risk of ototoxicity.

Ordinarily, treatment should not be given for more than 7 to days or be repeated unless required for serious infection not sponsive to other agents.

As with other antibiotics, treatment with Garamycin Injectal may occasionally result in overgrowth of nonsensitive organisms. superinfection occurs, appropriate therapy is indicated.

Safety for use in pregnancy or the potential for fetal ototoxicity nephrotoxicity have not been established. Studies in pregnant a mals have not revealed teratogenic or ototoxic effects in the fet Garamycin Injectable should not be used in pregnant patients in women of childbearing age unless its use is deemed advisal by the physician.

Adverse Reactions: The overall incidence of ototoxicity consider related to treatment with Garamycin Injectable was 2.8 per c (16 of 565 patients). Contributory factors (two or more factors w relevant to most patients) were as follows: 10 had azotemia, received a total of 1 gram or more of the drug, 7 had recently ceived other potentially ototoxic antibiotics (streptomycin or ka mycin), and 5 were over 60 years of age. Six also had decreas high-tone hearing acuity, which returned to or toward normal the 4 patients retested.

Analysis of BUN data indicated that 4 (2%) of 172 patients show increases in BUN that were probably related to treatment wi Garamycin Injectable. Of 20 increases probably or possibly rela to treatment, 7 were reversible, 9 occurred in terminal patients, a 4 had no follow-up.

Other adverse reactions associated with treatment were one insta each of urticaria, decreased hematocrit, and reversible depressi of granulocytes with normal bone marrow. Other rarely report and possibly treatment-related adverse reactions were anemia, creased reticulocyte count, rash, purpura, drug fever, hypotensi convulsions, twitching, salivation, nausea, vomiting, increased tra aminase activity (SGOT or SGPT), increased serum bilirubin, creased serum calcium, and joint pain.

Packaging: Garamycin Injectable, 40 mg./cc., 2-cc. multiple-d vials, for intramuscular administration.

References: (1) Brayton, R. G., and Louria, D. B.: Gentamicin gram-negative urinary and pulmonary infections, Arch. Int. M *114*:205, 1964.* (2) Louria, D. B.; Young, L.; Armstrong, D., a Smith, J. K.: Gentamicin in the treatment of pulmonary infectio J. Infect. Dis. *119*:483, 1969. (3) Cox, C. E.: Gentamicin, a n aminoglycoside antibiotic: Clinical and laboratory studies in urin tract infections, J. Infect. Dis. *119*:486, 1969. (4) Groll, E.: Clini experience with gentamicin, data from 12 German clinics, in G tamicin: First International Symposium, Paris, January 19 Lucerne, Essex Chemie AG, pp. 121-128.* (5) Jackson, G. G.: Labo tory and clinical investigation of gentamicin, *ibid.*, pp. 62-74. Medeiros, A. E.: Discussion, J. Infect. Dis. *119*:533, 1969. (7) Polk, Discussion, J. Infect. Dis. *119*:529, 1969. (8) Three-month, nationwi hospital audit by R. A. Gosselin and Co., Inc., Dedham, Massachuse (mid-May to mid-August, 1969).

*Dosage in this investigational study was less than now recommend in Package Insert.

For more complete prescribing details, consult package insert Physicians' Desk Reference. Schering literature is also availa from your Schering Representative or Medical Services Departme Schering Corporation, Union, New Jersey 07083.

AHFS CATEGORY 8:12.28

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Georgetown University announces the receipt of many new large grants. A grant of $270,000, over a 3-year period, from the U.S. Department of Health, Education, and Welfare will be used to set up a service center for patients having nerve disorders with urinary tract problems. The service center will be directed by Dr. Roger Baker, Professor of Urology and Head of the Division of Urology at Georgetown University Hospital. Working with Dr. Baker on the multidiscipline project will be Dr. Desmond O'Doherty, Chairman of the Department of Neurology; Dr. Alfred Luessenhop, Director of the Neurosurgery Division; and Dr. Margaret Kenrick, Chairman of the Department of Physical Medicine and Rehabilitation.

A grant of $210,000 from the Rockefeller Foundation will be used to expand research in reproductive biology and for family planning and counseling services in several facilities and agencies with which Georgetown is affiliated. The research studies will be directed by Dr. Dessouky A. Dessouky.

A 1-million-dollar grant, the largest amount ever given by an alumnus for its capital campaign, has come from Bernard P. McDonough, Board Chairman of the McDonough Company of Parkersburg, West Va., who is a graduate of Georgetown Law School. His gift will help finance construction of Georgetown's new Law Center.

A gift of $100,000 from The Eugene and Agnes E. Meyer Foundation of Washington will help to equip its Child Development Center for mentally retarded children.

Veterans 65 years of age or older no longer have to disclose financial details to be admitted to a Veterans Administration hospital. Previously this information was required from all veterans who did not have a service-connected disability and were not drawing a pension. Veterans in this age group need only to certify that they are unable to pay for needed hospital or domiciliary care and for transportation for nonservice-related medical conditions.

The offices of **Group Health Association of America** have been moved from 1321 14th Street, N.W., to 1717 Massachusetts Avenue, N.W.; telephone (202) 483-4012.

Dr. Warren F. Draper, Executive Director of the United Mine Workers Welfare and Retirement Fund from 1948 until he retired in 1969, died, March 19, 1970, aged 86 years.

Dr. Draper spent 37 years in the U. S. Public Health Service, rising to the position of Deputy Surgeon General. Upon his retirement from that post in 1947 he served for a year as Assistant Vice President for health services with the American Red Cross.

He graduated in medicine from Harvard University in 1910. During World War II he was commissioned a Major General and served as Chief Health Officer in the Supreme Headquarters of Allied Powers in Europe.

Dr. Draper had served as Chairman of the Section on Preventive and Industrial Medicine of the American Medical Association and as President of the Association of Military Surgeons and the Harvard Medical Alumni Association.

▶ PERSONALS

Dr. Joseph B. Sheffery, Associate Clinical Professor of Obstetrics and Gynecology at Georgetown University School of Medicine, is now Chief of the Medical staff of Columbia Hospital for Women. Dr. Sheffery graduated from Georgetown University School of Medicine in 1937. He interned at Providence Hospital and served as resident physician at Columbia Hospital from 1938 to 1940. A diplomate of the American Board of Obstetrics and Gynecology, he is a Fellow of the American College of Surgeons, a Founding Fellow of the American College of Obstetrics and Gynecology, and a member of the Washington Gynecological Society and the Georgetown Clinical Society.

Dr. LaSalle D. Leffall, Jr., Professor of Surgery at Howard University College of Medicine, has been named Acting Dean of Howard, succeeding Dean K. Albert Harden whose resignation became effective April 1.

Dr. Leffall has been appointed to the National Advisory Committee on Alcoholism by the Honorable Robert H. Finch, Secretary of Health, Education, and Welfare.

Dr. Wallace M. Yater received the 1970 Distinguished Internist Award from the American Society of Internal Medicine at its annual banquet in Philadelphia, April 11. He was honored for "long service to medical organizations and for successfully combining careers as a teacher, clinician and an organization leader." The ASIM is concerned primarily with social, economic and political aspects of the delivery of medical care.

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Dr. Worth B. Daniels, Professor Emeritus of Medicine of Georgetown University School of Medicine, was elected to Mastership in the American College of Physicians at its 51st Annual Session in Philadelphia, April 12–17. Only 50 Masterships have been awarded in the past by the College and the honor is the highest accorded by the organization.

Dr. Daniels received his Bachelor's degree from the University of North Carolina in 1920, his medical degree from Johns Hopkins University in 1924, and from Georgetown University he received the degree, Doctor of Science, in 1926. He has served on the Georgetown faculty since 1927 and has practiced in Washington most of that time.

Dr. Henry D. Ecker took office at this meeting as Governor for the District of Columbia.

Dr. Ralph W. Wadeson, Jr., has been appointed Director of the Brain Dynamics Section at the Psychiatric Institute of Washington, D.C. His work will entail the treatment and rehabilitation of patients with cerebral dysfunctioning.

Dr. Michael A. Woodbury, Director of Community Services at the Psychiatric Institute, has been named Director of its Emergency Home Care Program. Dr. Woodbury is an Associate member of the D.C. Medical Society.

Dr. Joseph K. Perloff was reëlected Treasurer of the American College of Cardiology at its 19th Annual Scientific Session in New Orleans, February 25–March 1.

Dr. William A. Sodeman, of Philadelphia, took office as the new President of the College. Elected President-elect was Dr. Forrest H. Adams, a pediatric cardiologist of Los Angeles, who will take office at the 20th Annual Scientific Session in Washington, D.C., February 3–7, 1971.

At the recent meeting **Dr. Roger O. Egeberg,** Assistant Secretary for Health and Scientific Affairs in the Department of Health, Education, and Welfare, was awarded the 1970 Gold Medal of the College and was named an honorary Fellow.

Two more Active members of the D.C. Medical Society have been granted fellowships in the College. They are **Dr. Antonio C. deLeon, Jr., and Dr. T. James Waters.**

Dr. Alexander Burnett, who is in his ninth year as Instructor in Obstetrics and Gynecology at Georgetown University School of Medicine, was voted to receive the "Golden Apple" by clinical students in the School of Medicine. The presentation was made at the Annual Student-Faculty Dance, February 28. Dr. Burnett, who came to the United States from Canada, received his doctorate from the University of Western Ontario, London, Ontario.

Dr. Burnett, who was awarded the "Golden Apple" by his clinical students at Georgetown

Dr. Alan L. Pinkerson, who was appointed to the senior professional staff of the Myocardial Infarction Branch of the National Heart and Lung Institute early in 1969, has been named Assistant Chief of the Myocardial Infarction Branch, where his duties will include planning and administering research programs.

NEW MEMBERS

Active

Mohan T. Advani, M.D. Office: 2141 K Street, N.W. Born in Lahore, India. Medical degree: Osmania University, India, 1960. Specialty: Psychiatry.

Jose Marco T. Antonio, M.D. Office: St. Jude Medical Center, 2808 Rhode Island Avenue, N.E. Born in Bulacan, Philippines. Medical degree: Far Eastern University, Manila, 1963. Specialty: Internal Medicine.

Thomas Eugene Piemme, M.D. Office: George Washington University Clinic. Born in Beaver, Pa. Medical degree: University of Pittsburgh, 1958. Specialty: Internal Medicine.

Associate

William Kent Furst, M.D. Office: 9401 Indian Head Highway, Oxon Hill, Md. Born in Brooklyn, N.Y. Medical degree: Georgetown University, 1963. Specialty: Internal Medicine.

Chin-Chuan Hsu, M.D. Office: 6905 Baltimore Blvd., College Park, Md. Born in Taiwan, Republic of China. Medical degree: National Taiwan University, 1958. Specialty: Internal Medicine.

Resident-Intern

Henry Junius Smith III, M.D. Office: 809 Jefferson Street, N.E. Born in Atlanta, Ga. Medical degree: Howard University, 1957. Specialty: Obstetrics and Gynecology.

OBITUARIES

William Francis Greaney, M.D.

(1892–1970)

Dr. William F. Greaney, a Life member of the Medical Society of the District of Columbia, died, February 27, 1970, at Doctors Hospital after a long illness. He lived at 742 12th Street, N.W.

A native of Holyoke, Mass., Dr. Greaney was born, August 22, 1892. He attended Holy Cross College in Worcester, Mass., and came to Washington to continue his studies at Georgetown University, graduating in medicine in 1915.

During World War I he enlisted in the Medical Corps of the U.S. Army, serving overseas with the 82nd Division. While in Europe he took some postgraduate work in internal medicine at the University of Marseille, France.

Dr. Greaney was licensed to practice in Washington, D.C., in 1921. From 1934 until 1947 he was Chief Medical Examiner for the District Boxing Commission. He was Medical Inspector of Schools in D.C. for 41 years. He retired in 1962.

Dr. Greaney was elected to Active membership in the Medical Society of D.C. in 1926 and became a Life member in 1965. He was a member of the American Medical Association, the Knights of Columbus, and St. Gabriel Catholic Church.

His wife, Mrs. May Walsh Greaney, preceded him in death. He leaves a son, William F. Greaney, Jr., and a daughter, Mrs. Maureen Billerbeck, both of Silver Spring, Md.; and 2 sisters, the Misses Gertrude and Mildred Greaney, both of Holyoke, Mass.

Richard Vinton Mattingly, M.D.

(1899–1970)

Dr. Richard V. Mattingly, retired physician, died in George Washington University Hospital, February 16, 1970. He lived at 3701 Cumberland Street, N.W.

A Washingtonian, Dr. Mattingly was born, September 9, 1899. He attended the public schools in Washington and studied law at Georgetown University. He received his Bachelor of Laws degree in 1919 and his Master's in patent laws in 1920. After practicing law from 1921 to 1924 he decided to change his career to medicine. He enrolled at George Washington University, receiving his A. B. degree in 1928 and his medical degree in 1931. He interned at Garfield Memorial Hospital the following year.

Dr. Mattingly practiced general medicine in the Washington area from 1932 until he retired in 1961. He had courtesy privileges at Sibley, Doctors, and the Washington Hospital Center. He served for a time as Senior Medical Officer at Lorton Reformatory in Lorton, Va.

Dr. Mattingly was a member of the American Medical Association and the American Academy of General Practice. He was elected to Active membership in the Medical Society of the District of Columbia in 1933. He was affiliated with Christ Lutheran Church on 16th Street.

He leaves his wife, Mrs. Pauline Heitmuller Mattingly; 2 sons, Richard V., Jr., of McLean, Va., and John M., of Rockville, Md.; a daughter, Mrs. Mary M. Walker, of Shelby, N.C.; and 2 brothers, G. Heard Mattingly, of Chevy Chase, Md., and William E. Mattingly, of Washington.

Frederick C. Heath, M.D.

(1905–1970)

Dr. Frederick C. Heath, former Deputy Director of the District of Columbia Health Department, died, February 24, 1970. He lived at 111 Lee Avenue, Takoma Park, Md.

Born in Cecil County, Md., March 12, 1905, Dr. Heath attended schools in Wilmington, Del. He enrolled in Hahnemann Medical College, Philadelphia, for his premedical and medical studies and received his degree in 1929. He interned at Community General Hospital, Reading, Pa.

Dr. Heath began his private practice in Laurel-dale, Pa., in 1930, adding industrial medicine and public health duties in 1936. He interrupted his practice in 1942, during World War II, to enlist in the Medical Corps of the Army Air Force, serving in the Mediterranean Theater of Operations and in North Africa and Italy over a 4-year period. He held the rank of Major in the inactive Reserves.

Dr. Heath served as Health Officer of the Giles-Montgomery-Radford District in Virginia from 1945 to 1950. During this time he took postgraduate study in public health at Johns Hopkins University and received his Master's degree in 1949. From 1951 to 1952 he was Health Officer of Fairfax County, Va., and in 1952 he accepted the position of Deputy Director of Public Health in the District of Columbia. He retired in 1969.

Dr. Heath was a member of the American Medical Association, a Fellow of the American Public Health Association, an Active member of the Medical Society of the District of Columbia since 1953, and a member of the Association of Military Surgeons of the U.S.

Surviving him are his wife, Mrs. Ethel Jean Oskins Heath; a son, Donald F. Heath, of Severna Park, Md.; a brother, A. Cleaver Heath, of Wilmington, Del.; and a sister, Mrs. Elizabeth Baker, of Santurce, P.R.

John Condron Murphy, M.D.

(1914–1970)

Dr. John C. Murphy, Washington surgeon, died in Doctors Hospital, March 1, 1970. He had been in ill health for a number of years. He lived at 2500 Wisconsin Avenue, N.W.

Dr. Murphy was born in North Adams, Mass., May 26, 1914. He received his B.S. degree from the University of Notre Dame in 1936 and his medical degree from Yale University in 1940. He interned at Gallinger Municipal (now D.C. General) Hospital for a year and served as resident in surgery at the same hospital for 3 years, from 1941 to 1944.

With World War II in progress he enlisted in the U.S. Navy Medical Corps and served until 1946. After the War he returned to Washington and enrolled for postgraduate study in surgery and general medicine at George Washington University.

He began his surgical practice in the District of Columbia in 1946. He was on the faculty of Georgetown University School of Medicine as Clinical Instructor in Surgery for a number of years. He had served on the executive and teaching staffs of Doctors Hospital and on the attending staff of Suburban (Md.) Hospital and Sibley Hospital.

He was a Fellow of the American College of Surgeons and an Active member of the Medical Society of the District of Columbia since 1947.

He leaves his wife, Mrs. Audra C. Murphy; a son, John C. Murphy, Jr., a student at the University of Pennsylvania; a sister, Mrs. John Reid, of Pittsfield, Mass.; and a brother, Dennis Murphy, of Spring Valley, N.Y.

Leroy Jones, M.D.

(1929–1970)

Dr. Leroy Jones, Assistant Chief of Surgery at St. Elizabeths Hospital, died, March 21, 1970, at Freedmen's Hospital, after a brief illness.

Dr. Jones was born in Kinston, N. C., August 14, 1929. He was graduated from St. Augustine's College, Raleigh, N. C., in 1951 and received his medical degree from Howard University in 1959. He interned for a year at Kate Bitting Reynolds Hospital in Winston-Salem, N. C., and from 1960 to 1964 served a residency in surgery at Freedmen's Hospital.

Dr. Jones served in the Army Chemical Corps from 1951 to 1953 and worked as a supervisor of chemical research for the DuPont Laboratories before deciding to study medicine.

He had practiced in the District of Columbia since 1964. A diplomate of the American Board of Surgery, he served on the surgical staff of both Freedmen's and Hadley Memorial Hospitals. He was also engaged in the private practice of general surgery in offices at 3300 Stanton Road, S.E.

Elected to Active membership in the Medical Society of the District of Columbia in 1966, Dr. Jones was a Fellow of the American College of Surgeons and a member of the National Medical Association and the Medico-Chirurgical Society of D. C.

He is survived by his wife, Mrs. Margaret Ward Jones, a son, Bruce L., and a daughter, Lisa A., all residing at 3604 Austin Street, S.E. He also leaves a brother, Jim H. Jones, of Kinston, N. C., and a sister, Mrs. Mattie Elder, of Philadelphia.

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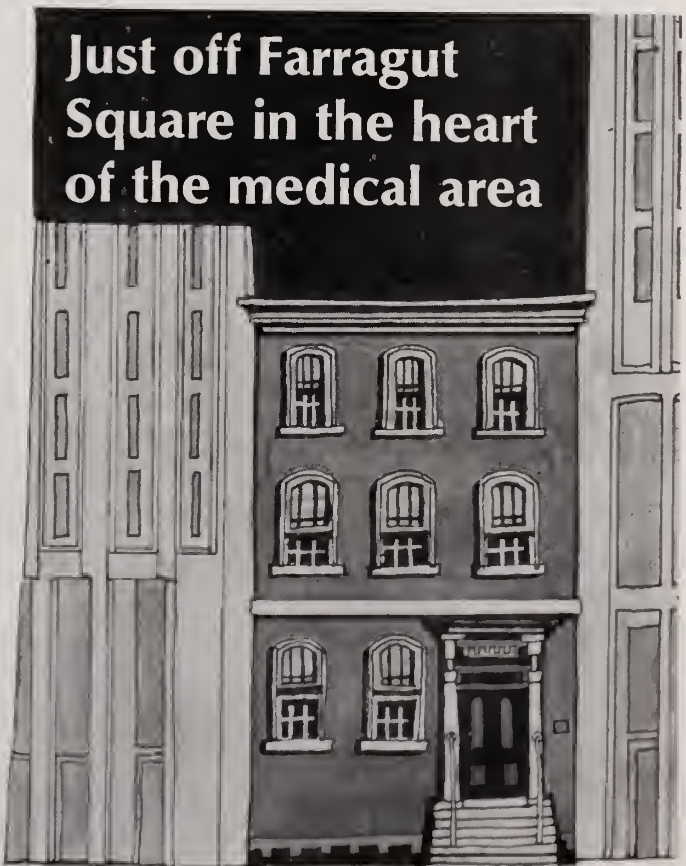
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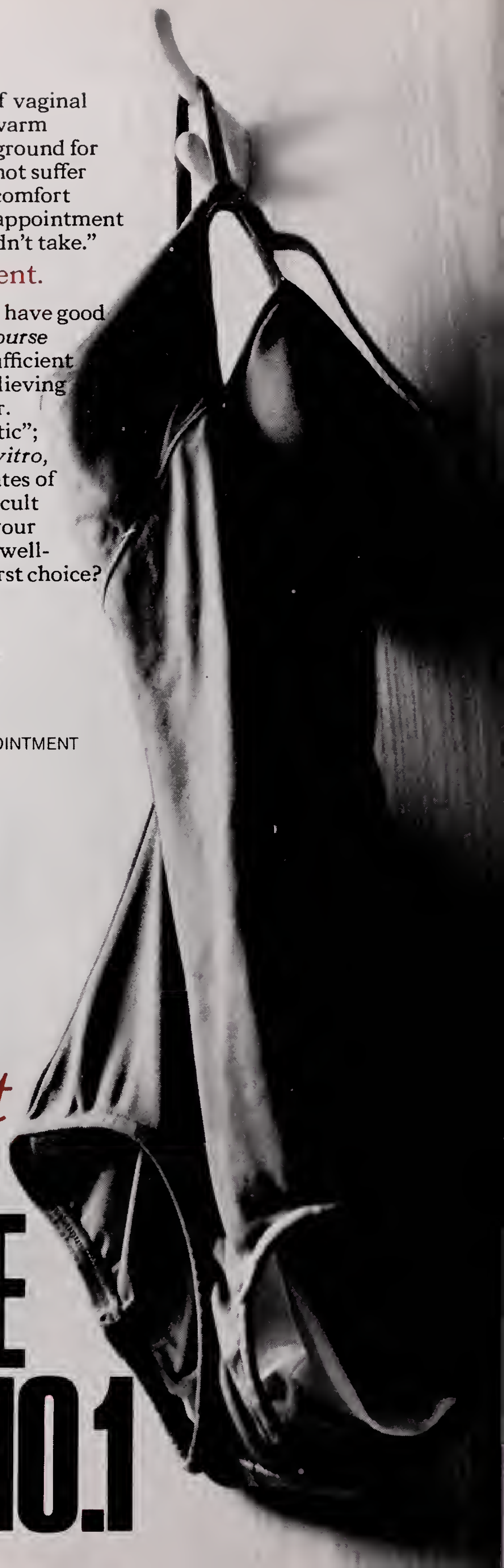

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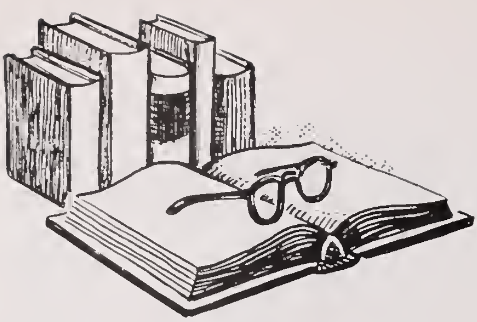

Book Reviews

Cardiovascular Surgery; Current Practice. Volume One. Edited by THOMAS H. BURFORD, M.D., AND THOMAS B. FERGUSON, M.D. Price, $18.00. Pp. 273, with 134 illustrations. St. Louis: Mosby, 1969.

Undoubtedly this series of books fill a gap in this rapidly developing and expanding field of surgery. Volume One contains 9 chapters dealing with various subjects of cardiovascular surgery. They are all written by authorities, and the list of names is really impressive. Subsequent volumes, however, will have a hard time to compete with this one and may present a problem to maintain the high caliber. There are important cardiovascular surgical subjects left out of this volume, as is inevitable. No vascular problems are dealt with.

It is difficult to single out which one of the chapters is the best. Current practice in cardiovascular surgery is concerned with future and developing techniques. Established procedures do occupy the major part of this volume. Chapter 1, present status and future trends of heart-lung machines, is an excellent review with a rich list of references. Chapters 2 and 3 deal with postoperative care and respiratory support for the patient undergoing open-heart surgery. They are both practical and clear. The only section on congenital diseases per se is the one on tetralogy of Fallot (chapter 4). It is an extensive review of the subject and includes discussion on many controversial points.

Artificial heart valves are extensively dealt with in the next 2 chapters. This is only natural since heart valvular work is the bulk of open-heart surgery today. Outstanding is the review on prosthetic devices for valves by Dr. Nina Braunwald. Homologous and heterologous aortic valves are gaining support in some centers but their clinical application is not yet as wide and popular as the prostheses.

Revascularization of the myocardium is reviewed by Dr. D. Effler in his eloquent way. This is a rapidly developing field, and it will undoubtedly take larger space in forthcoming issues. It utilizes only 10 pages of this book with 11 references, a rather limited source of information. The next chapter, cardiac transplantation, is an excellent outline of present views on the subject. Clinical results have been rather disappointing, but the contributions of all working in this field have been great. The problem of rejection is the main obstacle for further progress. Finally, chapter 9, about present and future ventricular assistive devices, is written by Drs. DeBakey and Dietrich. It covers rather briefly all aspects of assisted circulation—partial, total, temporary and permanent (implantable) heart bypass, and heart substitutes. This field is fast-growing and we certainly shall see more space given to it in future volumes.

The Editors are to be congratulated for their choice of subjects and especially for the allowance of space. Established procedures are given enough pages for extensive review, while developing techniques and future trends are given less but are not forgotten. This policy should be maintained in order to fulfill the purpose of this very promising series.

MICHAEL G. SEREMETIS, M.D.

Benign Diseases of the Vulva and Vagina. HERMAN L. GARDNER, M.D., AND RAYMOND H. KAUFMAN, M.D. Price, $23.50. Pp. 359, with 406 illustrations, including 2 color plates. St. Louis: Mosby, 1969.

Now and again in perusing the gynecologic literature one encounters a really first-rate textbook. This treatise, "Benign Diseases of the Vulva and Vagina," by Herman L. Gardner and Ramond H. Kaufman, which represents a professional lifetime of careful clinical practice, is written in a very interesting, scientific, and scholarly manner. It is a book that should be in the library of medical students and residents as well as practicing physicians and specialists. Candidates for the American Board examination might even find it a windfall.

The 24 chapters begin with anatomy, embryology, and developmental defects and continue through the more common benign lesions of the vulva and vagina to a number of miscellaneous conditions which academicians who review books should know more about but seldom do, i.e., adenosis, Bechet's syndrome, erythroplasia of Queyrat, Fox-Fordyce disease, TRIC virus, and worms. In chapter 9 the vulvar dystrophies are divided into hyperplastic, atrophic and mixed lesions rather than the customary designation of leukoplakia and kraurosis. This represents an improvement in our classification based upon accurate microscopic diagnosis rather than upon the clinical appearance of lesions.

The senior author in 1954 first described *Haemophilus vaginalis* vaginitis. This original contribution, delineated in chapter 13, has been verified many times. In 90 per cent of cases it is responsible for the so-called "mixed vaginitis" or "nonspecific leukorrhea."

The references in each chapter are excellent and

(*Continued on page 17*)

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Book Reviews

(*Continued from page 14*)

up-to-date. The photomicrographs, pictures, and plates are very clear and there are no footnotes. The authors and contributors deserve a compliment for a real contribution to our specialty.

Paul D. Bruns, M.D.

Strabismus, Heterophoria, Ocular Motor Paralysis; Clinical Ocular Muscle Imbalance. Professor René Hugonnier and Doctor Suzanne Clayette-Hugonnier. Translated by Suzanne Véronneau-Troutman, M.D., F.R.C.S. (C). Price, $35.00. Pp. 709, with 271 illustrations. St. Louis: Mosby, 1969.

In this first English edition, ably translated and edited from the second French edition, the authors have made available to their English-speaking colleagues an extensively revised text, demonstrating their broad experience in the field of strabismology.

A classical presentation has been followed, leading the reader from the anatomy and physiology of the extraocular muscles, through the diagnosis and management of their disorders. A graceful and instructive foreword has been written by Dr. Frank D. Costenbader, a former President of the Medical Society of the District of Columbia.

The authors have wisely incorporated the terminology adopted at the 1966 Giessen Symposium sponsored by the XXth International Congress of Ophthalmology. The chapters on the anatomy of the ocular motor pathways and nerves, as well as those dealing with extraocular muscle paralyses, will be of particular value to those interested in neuro-ophthalmology.

The subject of the origin and treatment of amblyopia is especially well presented. Early diagnosis and therapy are emphasized. The methods of Cüppers are recommended for children older than 7 years, and straight occlusion for younger. The extensive presentation of orthoptics, including its indications and advantages as well as its hazards, is superb. Surgical treatment, including principles, techniques, results and complications, is reviewed, and the authors' preferences are noted.

A short bibliography is included at the end of each chapter. A more extensive one would have been of greater value to the serious student interested in original sources.

This book is highly recommended to all students of strabismology and neuro-ophthalmology.

Melvin G. Alper, M.D.

Textbook of Pediatrics, 9th ed. Edited by Waldo E. Nelson, M.D. Associate Editors: Victor C. Vaughan III, M.D., and James R. McKay, M.D., with the collaboration of 78 contributors. Price, $21.50. Pp. 1589, with 527 illustrations. Philadelphia: Saunders, 1969.

The senior editor shares responsibilities with 2 medical colleagues in the ninth edition of this well-known pediatric text. The editors and their collaborators have again synthesized current pediatric knowledge in a single monumental volume. It is to the editors' credit that a fairly extensive revision has been accomplished without increasing the size or length of the book.

Many sections of the book have experienced fairly extensive revision, such as the section on Preventive Pediatrics by Dr. Robert J. Haggerty. By virtue of their special interests, Dr. Charles A. Janeway and Dr. Victor C. Vaughan III have provided an excellent presentation of immunity, allergy and infectious diseases. This section also includes updated material on the rapidly expanding field of Immunologic Deficiency Diseases. The material on clinical allergy provides details of management that are rarely encountered in a general textbook of this kind.

In the section on Infectious Diseases, the age of the initial smallpox vaccination has logically changed from the first year of life to the 1- to 3-year age-period in nonendemic areas. Some of the newer antibiotics receive consideration in this section.

This revision has served to keep this excellent work in the vanguard of pediatric texts. The book is certainly worthy of high commendation for medical students, house officers, and physicians who are involved with the professional care of children.

Roland B. Scott, M.D.

Physical Diagnosis: The History and Examination of the Patient, 3rd ed. John A. Prior, M.D., Jack S. Silberstein, M.D., and 12 contributors. Price, $10.50. Pp. 436, with 454 illustrations. St. Louis: Mosby, 1969.

This popular and respected textbook of physical diagnosis has been well updated in this most current edition. The physiological approach to physical diagnosis is well covered by both the text and the illustrations. The technique of eliciting physical findings will be clearly understood by students and clinicians who read it.

The most important aspect of physical diagnosis, the art of taking a meaningful history, has, unfortunately, not received sufficient emphasis despite the intentions expressed in the preface.

Physical diagnosis is usually the student's initial encounter with clinical medicine—his first exposure to the patient-physician interactions. Disappointingly, this book and many others on the subject fail to emphasize to the student at this formative period the value of these patient-physician communications.

Andre Laz, M.D.

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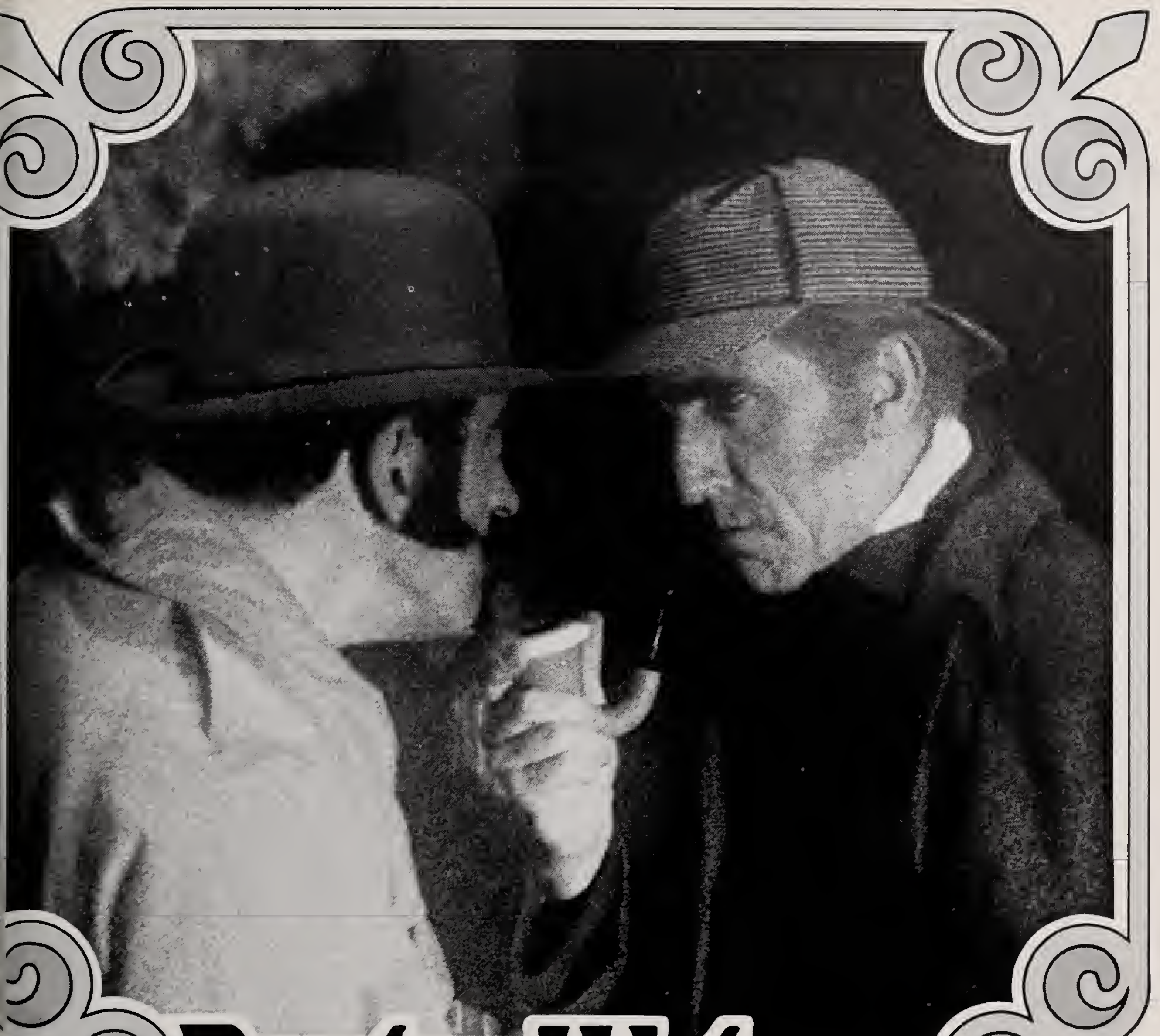

Doctor Watson
exposes a double agent

on the Embankment. Two figures emerge into silhouette against a d street lamp. The flare of a match reveals the profile of Sherlock es. As he lights his calabash, his companion speaks:

Jove, Holmes, that amazing intuition of yours has proved right . What we're looking for is a single entity. I thought we were ng with several others—even twins. But now—I'd say we've vered a double agent."

me more, Watson, and be quick about it!"

son withdraws a folded paper from inside his greatcoat, and aloud from it):

key to the whole cypher is SYNTHROID (sodium levothy-e)"...

h! Watson, not so loud! You'll alert our quarry."

son continues): "A single entity that serves two functions."

aster stroke, Watson."

ow along, Holmes. In the neighborhood of 95% of the circulat-yroid hormone is levothyroxine—T_4 as you call it. T_4 is bound roxine-binding proteins in the serum. It becomes available only ally to tissue cells—as free thyroxine."

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"Magnificent, Watson! So protein-bound thyroxine is the major form of circulating thyroid hormone, and it is released as 'free' thyroxine. And that's why SYNTHROID is able to simulate the normal process so artfully. Q.E.D."

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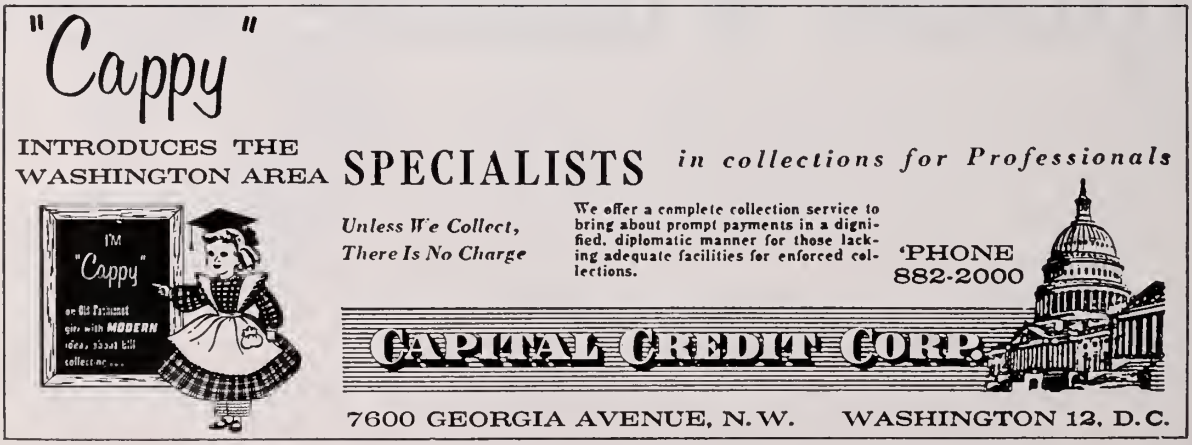
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August 2–6: National Medical Association. Regency Hyatt House, Atlanta, Ga. Address: Dr. Emerson C. Walden, Board Chairman, 4200 Edmondson Ave., Baltimore, Md. 21229.

August 9–14: International Symposium on Plastic and Reconstructive Surgery of the Face and Neck. Walforf-Astoria Hotel, New York. Address: Dr. John Conley, Executive Chairman, 139 East 36th Street, New York, N.Y. 10016.

August 12–15: Fourth World Conference on General Practice. Palmer House, Chicago. Address: Mr. Mac F. Cahal, Executive Director, Volker Blvd. at Brookside, Kansas City, Mo. 64112.

August 16–21: American Congress of Rehabilitation Medicine. New York Hilton, New York. Address: Mr. Creston C. Herold, Executive Director, 30 North Michigan Ave., Chicago, Ill. 60602.

August 18–21: Second World Meeting on Medical Law. Statler Hilton Hotel, Washington. Address: R. Dierkens, Dr. Jur., General Secretariat, Apotheekstraat 5, B-9000, Ghent, Belgium.

September 19–20: National Congress on Medical Ethics. Ambassador West Hotel, Chicago. Address: Medical Ethics Department, American Medical Association, 535 North Dearborn Street, Chicago, Ill. 60610.

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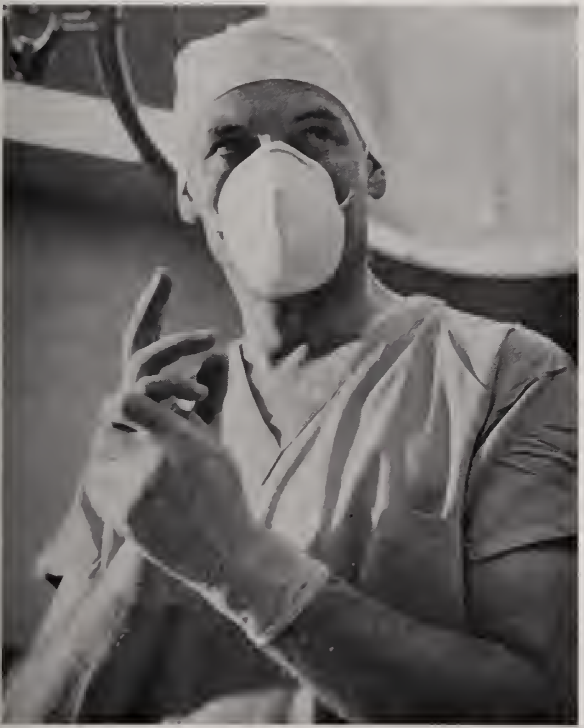

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History of Medical Society: Chapter I
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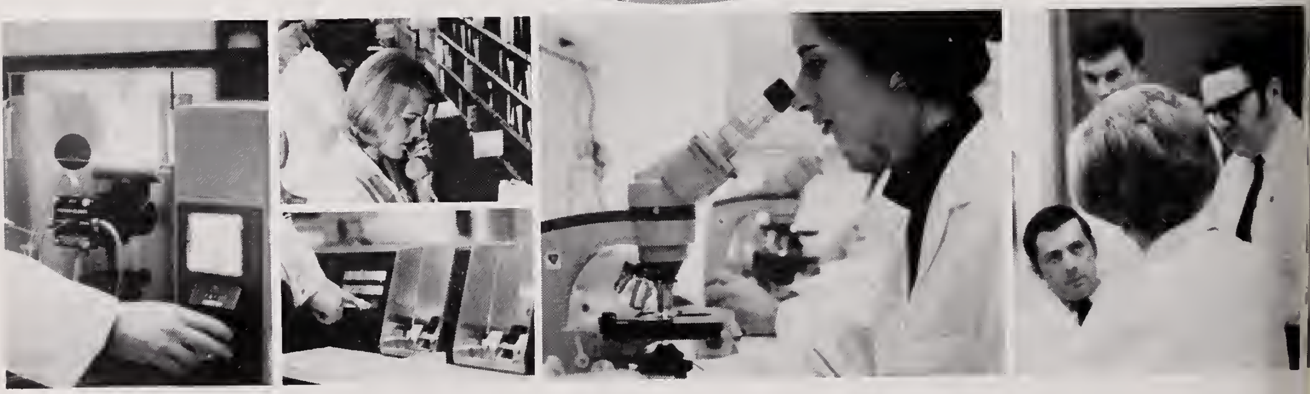

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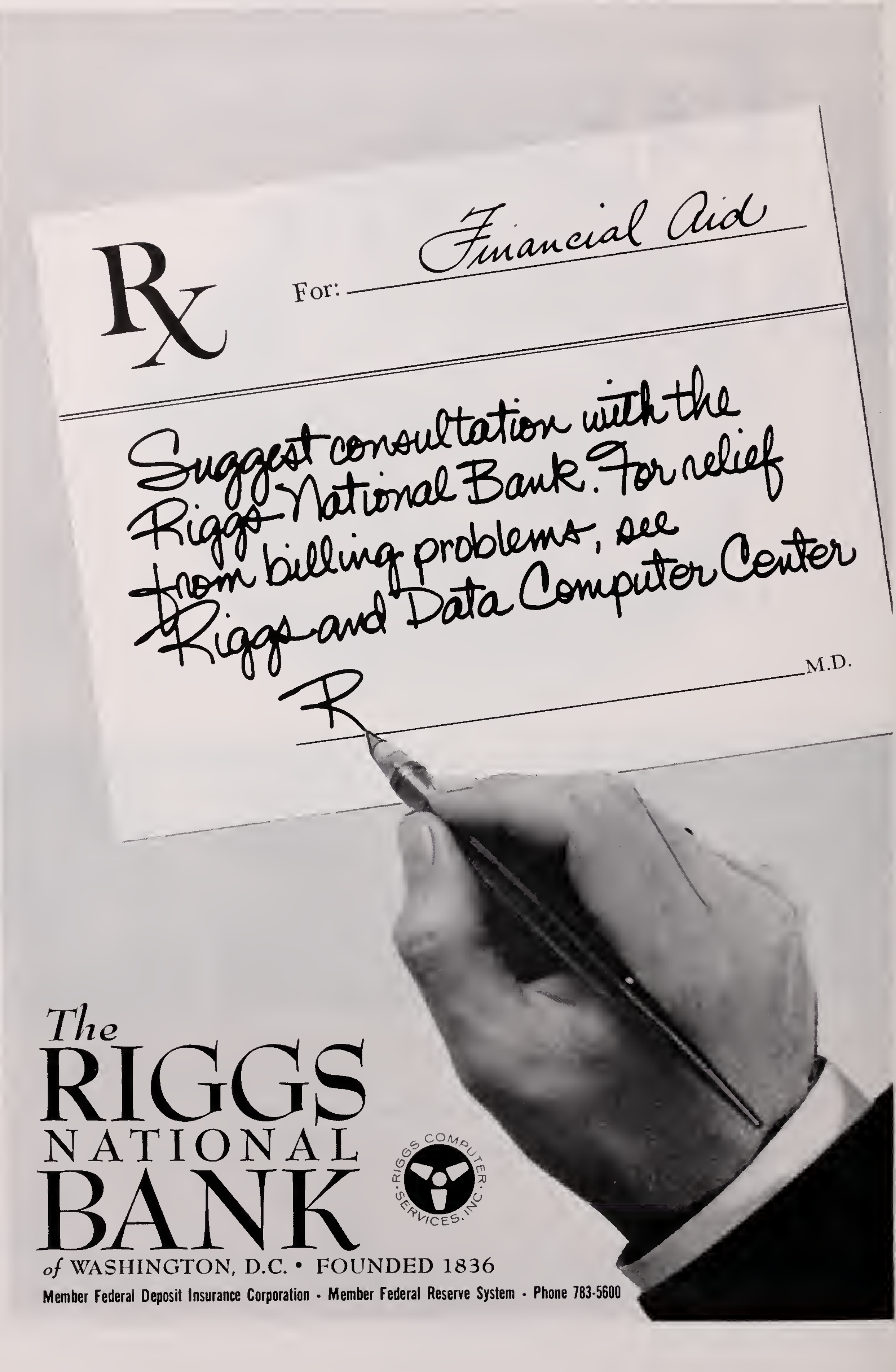

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Second-class postage paid at Baltimore, Md.
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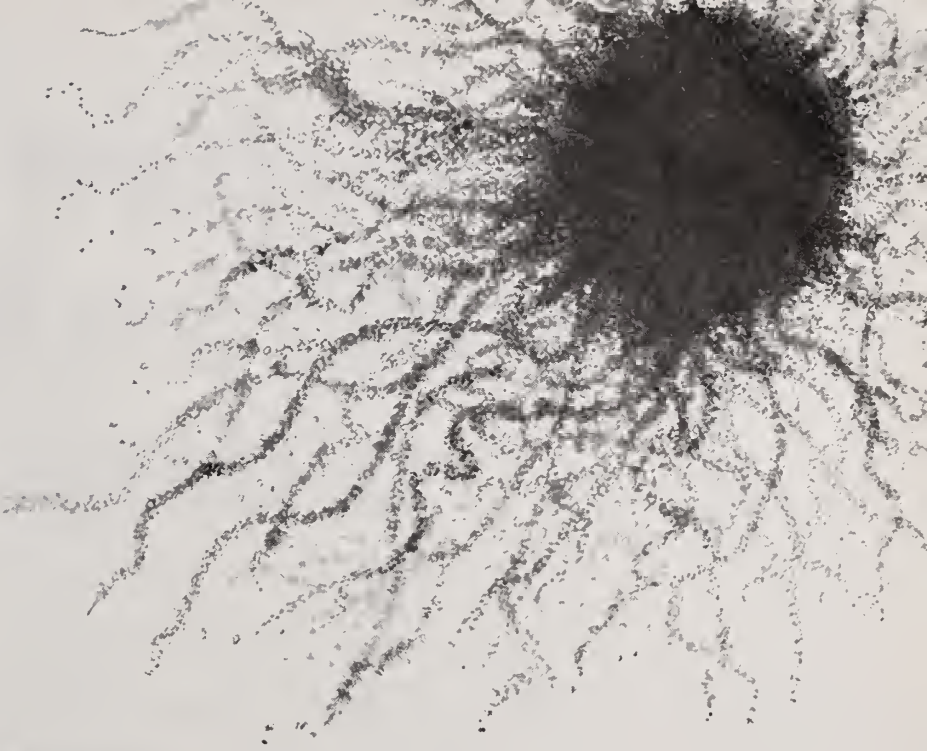

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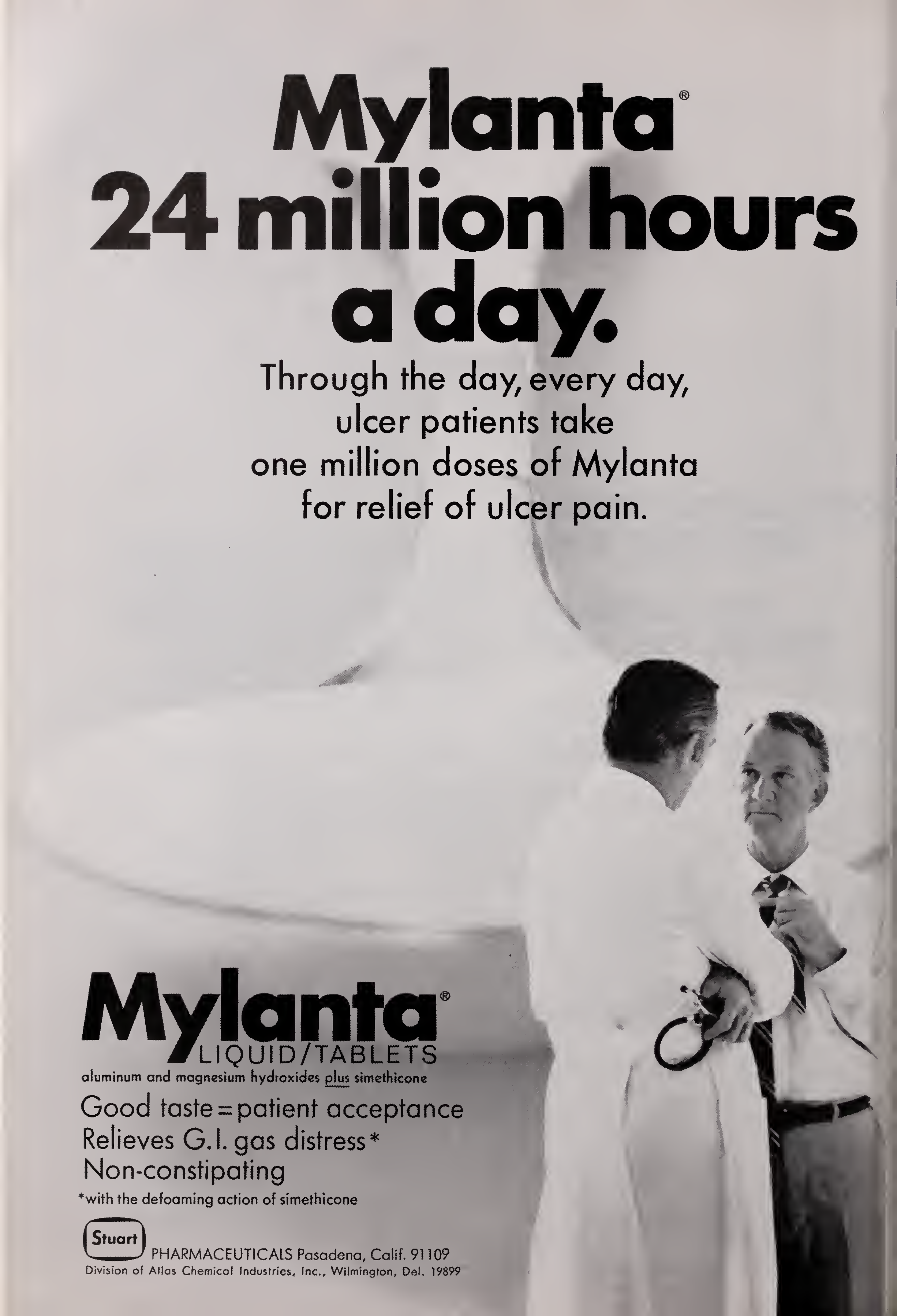

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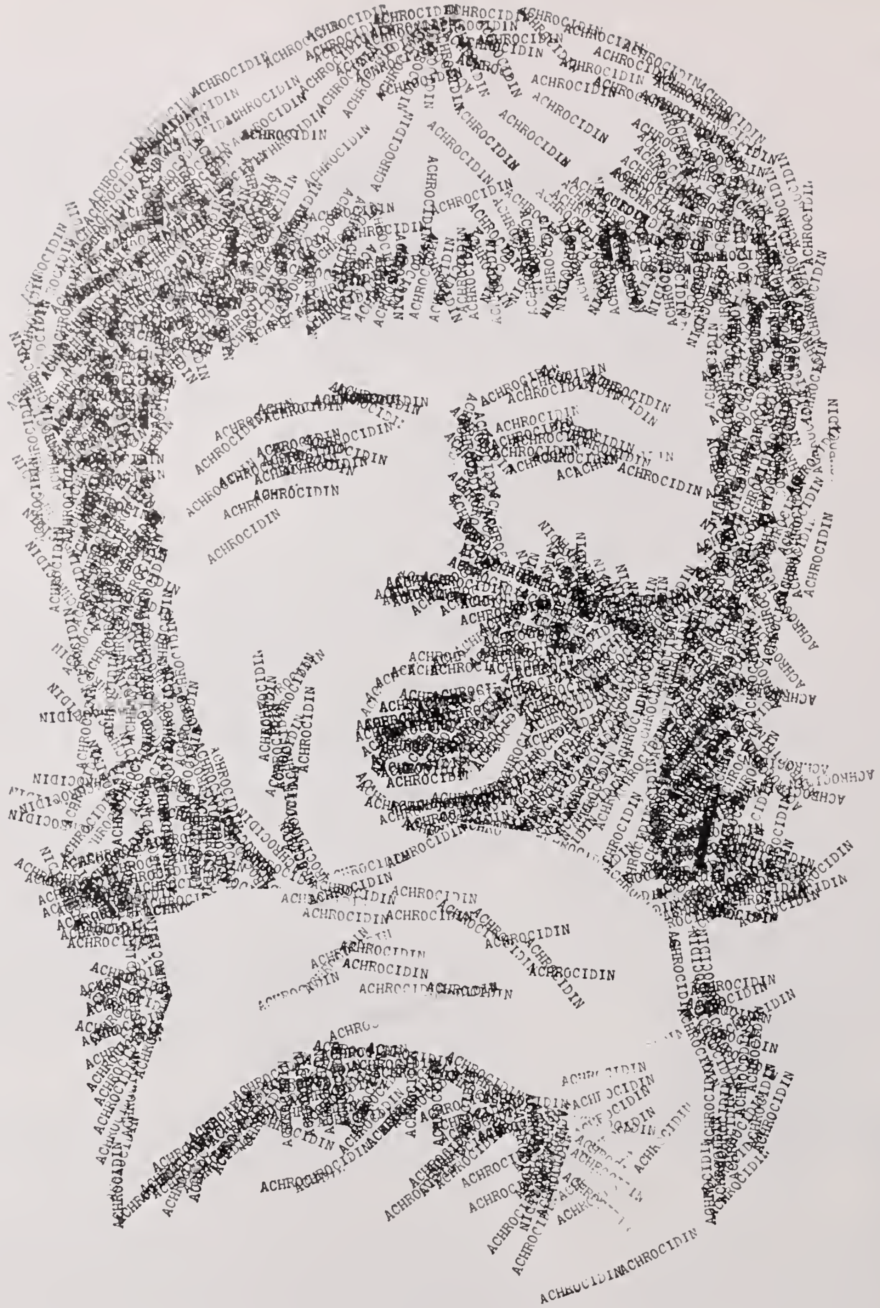

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Contraindications: Hypersensitivity to any component.
Warning: In renal impairment, since liver toxicity is possible, lower doses are indicated; during prolonged therapy consider serum level determinations. Photodynamic reaction to sunlight may occur in hypersensitive persons. Photosensitive individuals should avoid exposure; discontinue treatment if skin discomfort occurs.
Precautions: Drowsiness, anorexia, slight gastric distress can occur. In excessive drowsiness, consider longer dosage intervals. Persons on full dosage should not operate vehicles. Nonsusceptible organisms may overgrow; treat superinfection appropriately. Treat beta-hemolytic streptococcal infections at least 10 days to help prevent rheumatic fever or acute glomerulonephritis. Tetracycline may form a stable calcium complex in bone-forming tissue and may cause dental staining during tooth development (last half of pregnancy, neonatal period, infancy, early childhood).
Adverse Reactions: *Gastrointestinal*—anorexia, nausea, vomiting, diarrhea, stomatitis, glossitis, enterocolitis, pruritus ani. *Skin*—maculopapular and erythematous rashes; exfoliat dermatitis; photosensitivity; onycholysis, r discoloration. *Kidney*—dose-related rise BUN. *Hypersensitivity reactions*—urticar angioneurotic edema, anaphylaxis. *Intracra* —bulging fontanels in young infants. *Teet* yellow-brown staining; enamel hypoplas *Blood*—anemia, thrombocytopenic purpu neutropenia, eosinophilia. *Liver*—cholestasis high dosage.
Upon adverse reaction, stop medication a treat appropriately.

Lederle LEDERLE LABORATORIES, A Division of American Cyanamid Company, Pearl River, New York 10965

The girth control pill

Tepanil® Ten-tab

(continuous release form)

(diethylpropion hydrochloride)

works on the appetite not on the 'nerves'

When girth gets out of control, TEPANIL can provide sound support for the weight control program you recommend. TEPANIL reduces the appetite—patients enjoy food but eat less. Weight loss is significant—gradual—yet there is a relatively low incidence of CNS stimulation.

Contraindications: Concurrently with MAO Inhibitors, in patients hypersensitive to this drug, in emotionally unstable patients susceptible to drug abuse.

Warning: Although generally safer than the amphetamines, use with great caution in patients with severe hypertension or severe cardiovascular disease. Do not use during first trimester of pregnancy unless potential benefits outweigh potential risks.

Adverse Reactions: Rarely severe enough to require discontinuation of therapy. Unpleasant symptoms with diethylpropion hydrochloride have been reported to occur in relatively low incidence. As is characteristic of sympathomimetic agents, it may occasionally cause CNS effects such as insomnia, nervousness, dizziness, anxiety, and jitteriness. In contrast, CNS depression has been reported. In a few epileptics an increase in convulsive episodes has been reported. Sympathomimetic cardiovascular effects reported include ones such as tachycardia, precordial pain, arrhythmia, palpitation, and increased blood pressure. One published report described T-wave changes in the ECG of a healthy young male after ingestion of diethylpropion hydrochloride; this was an isolated experience, which has not been reported by others. Allergic phenomena reported include such conditions as rash, urticaria, ecchymosis, and erythema. Gastrointestinal effects such as diarrhea, constipation, nausea, vomiting, and abdominal discomfort have been reported. Specific reports on the hematopoietic system include two each of bone marrow depression, agranulocytosis, and leukopenia. A variety of miscellaneous adverse reactions have been reported by physicians. These include complaints such as dry mouth, headache, dyspnea, menstrual upset, hair loss, muscle pain, decreased libido, dysuria, and polyuria

Convenience of two dosage forms: TEPANIL Ten-tab tablets One 75 mg tablet daily, swallowed whole, in midmorning (10 a m). TEPANIL One 25 mg tablet three times daily, one hour before meals If desired, an additional tablet may be given in midevening to overcome night hunger Use in children under 12 years of age is not recommended

T 006A 1 70 U S PATENT NO 3,001 910

THE NATIONAL DRUG COMPANY
DIVISION OF RICHARDSON MERRELL INC
PHILADELPHIA, PENNSYLVANIA 19144

Painful night leg cramps...

unwelcome bedfellow for any patient– including those with arthritis, diabetes or PVD

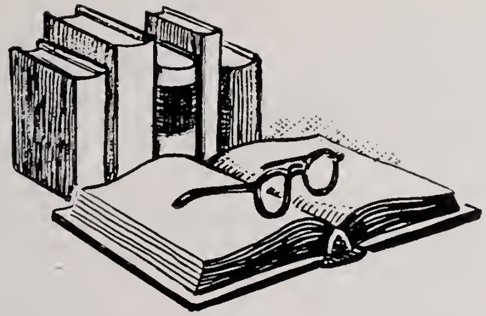
One thing patients can sleep without, particularly patients with chronic disease conditions such as arthritis, diabetes or PVD, is painful night leg cramps. Although seldom the presenting complaint, night leg cramps can tie your patients up in painful knots. Now, just one tablet of QUINAMM at bedtime can usually bring an end to shattered sleep and needless suffering. Your patients will sleep restfully—gratefully—with QUINAMM, specific therapy to prevent painful night leg cramps.

Prescribing Information—Composition: Each white, beveled, compressed tablet contains: Quinine sulfate, 260 mg., Aminophylline, 195 mg. **Indications:** For the prevention and treatment of nocturnal and recumbency leg muscle cramps, including those associated with arthritis, diabetes, varicose veins, thrombophlebitis, arteriosclerosis and static foot deformities. **Contraindications:** QUINAMM is contraindicated in pregnancy because of its quinine content. **Precautions/Adverse Reactions:** Aminophylline may produce intestinal cramps in some instances, and quinine may produce symptoms of cinchonism, such as tinnitus, dizziness, and gastraintestinal disturbance. Discontinue use if ringing in the ears, deafness, skin rash, or visual disturbances occur. **Dosage:** One tablet upon retiring. Where necessary, dosage may be increased to one tablet following the evening meal and one tablet upon retiring. **Supplied:** Bottles of 100 and 500 tablets.

THE NATIONAL DRUG COMPANY
DIVISION OF RICHARDSON-MERRELL INC.
PHILADELPHIA, PENNSYLVANIA 19144

Quinamm™ Specific therapy for night leg cramps

(quinine sulfate 260 mg., aminophylline 195 mg.)



Book Reviews

Textbook of Nuclear Medicine Technology. Paul J. Early, B.S., Muhammad Abdel Razzak, M.B.B.Ch., D.M., M.D., and D. Bruce Sodee, M.D., F.A.C.P. Price, $15.00. Pp. 378, with 241 illustrations. St. Louis: Mosby, 1969.

This textbook is a response to a long-standing need in training of nuclear medical technologists.

The text is divided into 2 portions: nuclear science and clinical theory. The nuclear-science portion deals with the atom, radionuclides and their emissions in an orderly manner. Radiation detection, protection and instrumentation are similarly treated. The clinical-theory section deals with each of the detectable organs, with illustrations for most, and reviews the various usable radionuclides for each.

The text is well written, easy to read, and fulfills its purpose; i.e., it is a textbook for nuclear medicine technologists and I can recommend it as such.

Robert A. Dietrich, M.D.

Personnel Administration and Labor Relations in Health Care Facilities. James O. Hepner, M.H.A., Ph.D., John M. Boyer, M.A., and Carl L. Westerhaus, M.S. Price, $15.00. Pp. 391. St Louis: Mosby, 1969.

This book is concerned mainly with the management of manpower resources in hospitals and health-care facilities. The authors state that its purpose is to point out some of the methods used in personnel administration and labor relations in business and industry which merit consideration by hospitals and health-care facilities.

In 1969 over 2.3 million people were working in hospitals with a payroll of almost 12 billion dollars. In 1960 health care was the Nation's third largest industry and it could by 1970 become the largest. The many challenges to and responsibilities of the hospital administrator require that he be an executive who understands the complex problems of professional and other groups in the attainment of high-quality patient care. Good human relations are a key to good personnel management, and their proper implementation is important, for hospitals expend 65 to 70 per cent of their budget for personnel payroll.

Legislation affecting personnel in hospitals, nursing homes, and other health care facilities, collective bargaining, fair labor standards, and civil rights are among the topics covered. The book discusses at length unionism and Federal and state legislation as they affect health care. The chapter on collective bargaining by employee groups such as nurses, pharmacists, orderlies, etc. indicates their interest in working conditions, fringe benefits, salary adjustments, and bonuses. The final chapter is concerned with the future supply of health manpower and the effective use of training methods together with the impact of automation.

This book should interest hospital administrators and staff personnel in the health field.

Bennie A. Moxness, M.D.

Synopsis of Clinical Cancer, 2nd ed. Condict Moore, M.D. Price, $11.75. Pp. 267, with 37 illustrations. St. Louis: Mosby, 1970.

As the title suggests, Dr. Moore has prepared a short but extremely useful résumé of the essential clinical characteristics of the common forms of cancer. The author has not attempted to produce a definitive treatise on all forms of malignant disease but has rather summarized the most important data about each of these neoplasms. Tumors are considered by their organ of origin, and there are, for example, sections on cancer of the breast, the prostate, cervix, lymphoma, etc. In each of these sections the author gives the important facts concerning incidence and distribution of the tumor, considerations concerning its etiology, as well as information on pathology, diagnosis and treatment.

The book is printed attractively and reads easily. There are numerous illustrations, charts and diagrams which serve as excellent illustrative material. The author emphasizes in his preface that a hopeful approach on the part of the physician is important in further improving the prognosis of the cancer patient. In his discussions he has included the latest concepts which in certain tumor-host systems are improving the prognosis of the cancer patient. Some of this material, i.e., current concepts in lymphoma, has been described only within recent years and has appreciably changed the management of these cancers.

I believe that this book is a very useful volume for the medical student and house officer, and it will also serve as a convenient, concise résumé of current trends in cancer therapy for the busy practitioner.

John F. Potter, M.D.

(*Continued on page 14*)

Book Reviews

(*Continued from page 13*)

The Role of Learning in Psychotherapy: A Ciba Foundation Symposium. Edited by Ruth Porter. Price, $12.00. Pp. 340. Boston: Little, Brown, 1968.

This Ciba-sponsored Symposium, held January 31–February 2, 1968, grew from discussions begun in 1964 with Dr. Isaac Macks and others about the paucity of objective and particularly controlled studies assessing psychotherapy. This Symposium was chaired by Dr. N. E. Miller and included ethologists, experimental psychologists, and psychiatrists of all schools—23 members in all.

The proceedings are made up of a series of papers on "The Persistence of Abnormal Behavior in Monkeys Following Isolation Rearing," "Validation of Results of Psychotherapy," "Learning Techniques in Education and Treatment," and, finally, "Projects for the Future." While the papers are of interest and of varying import, what gives this book its special quality is the discussion after each and the general discussion among all the participants.

The broad range of topics covering the therapy from behaviorists to psychoanalysts makes this book of interest to all in the field of mental health. While the theme of learning in psychotherapy is the unifying element, only a few papers vigorously address this topic. Still this collection gives one a broad sampling not readily available in one place and provides bibliography for further study as stimulated by these diverse topics.

As Dr. N. E. Miller states: "The participants come from diverse backgrounds. In general, though, they represent 2 great traditions: that of Freud and that of Pavlov. There are difficulties in communication for people from diverse backgrounds. While the hope is that individuals should be able to overcome these difficulties, I think that the most that can be expected is that exposure to those diverse points of view will open up questions which each individual then can use to reëvaluate his own held ideas and broaden his own endeavors."

The behaviorists touch on conditioning techniques and procedures and reveal a growing sophistication in these endeavors. The analysts reveal an attempt to make use of conceptual bridges to other disciplines.

One of the best papers in the Symposium is by Drs. Sandler and Jaffee on "Psychoanalytic Psychology and Learning Theory;" speak to a level of conceptualization at which such a symposium should be aimed. Dr. H. F. Heintz' paper, "Prospects and Possibilities in the Development of Behavior Therapy," is an excellent review of developments in this field.

A case presentation by Dr. Kubie from a psychoanalytic point of view, submitted by Dr. Lazarus to behavioral analysis, seems to be an excellent idea, but the limitation of time and space leaves its value unrealized. As Dr. Kubie states, "One aim of multidisciplinarian conferences such as this is to break down some of the ignorance of protagonists of one discipline for the theories and practise of another. But such conferences can be very frustrating in spite of good will among the participants." While the Symposium doesn't accomplish this end, still it furnishes a point of exposure, and, as such, I believe, fulfills a useful purpose, made more useful through the publication of this book.

Raymond I. Band, M.D.

Proceedings of the Centennial Symposium, Manhattan Eye, Ear and Throat Hospital. Volume Two. Otolaryngology. Edited by William F. Robbett, M.D. Price, $27.50. Pp. 342, with 453 illustrations. St Louis: Mosby, 1969.

This volume gives a detailed report on an international Otolaryngology Symposium held at Hotel Pierre, New York, in honor of the one hundredth year of Manhattan Eye, Ear and Throat Hospital. The meeting took place, June 3–7, 1968 and was attended by 668 physicians from the United States and 22 foreign countries. There were 57 major contributors to the discussions. The subjects were presented under 8 sections, each with a presiding chairman.

The contributors, all distinguished educators and surgeons in the field of otolaryngology, radiologists or researchers, gave individual reports or delivered their opinions and experiences in reply to moderators of panels and panelists. Many new surgical techniques or new treatment concepts were revealed by employing slides, radiographs, movies, and statistical reports.

Space does not permit evaluation of the numerous new ideas, modification of former methods or procedures. However, among the outstanding presentations were the following: new, controversial methods of neck dissection, new uses of cryosurgery, transphenoidal hypophysectomy for palliation of malignancies, and certain medical entities, modified reconstruction techniques in auricular deformities, congenital or acquired, newer methods for restoration of facial and neck contours after tissue losses due to injury or disease, surgery of cochlear hydrops and Bell's palsy, newer plastic methods for restoration of the voice in laryngectomees, proposed transplantation of the larynx itself, newer therapy for voice pathology, improved techniques in the surgery of stapes and middle-ear and laryngeal surgery.

This brief review includes only a partial list of the many stimulating topics discussed during this most outstanding Symposium.

David P. Allen, M.D.

(*Continued on page 24*)

I love my family.
I adore this house.
My in-laws are great.
The neighbors are wonderful.

Indications: For the management of anxiety and tension occurring alone or as accompanying symptom complex to medical and surgical disorders and procedures. Though not a hypnotic, fosters normal sleep through antianxiety and related muscle relaxant properties.

Contraindications. History of sensitivity to meprobamate.

Important Precautions. Carefully supervise dose and amounts prescribed, especially for patients prone to overdose themselves. Excessive prolonged use has been reported to result in dependence or habituation in susceptible persons, as alcoholics, ex-addicts, and other severe psychoneurotics. After prolonged excessive dosage, reduce dosage gradually to avoid possibly severe withdrawal reactions. Abrupt discontinuance of excessive doses has sometimes resulted in epileptiform seizures.

Warn patients of possible reduced alcohol tolerance, with resultant slowing of reaction time and impairment of judgment and coordination.

Reduce dose if drowsiness, ataxia or visual disturbance occurs; if persistent, patients should not operate vehicles or dangerous machinery.

Side Effects include drowsiness, usually transient, if persistent and associated with ataxia, usually responds to dose reduction, occasionally concomitant CNS stimulants (amphetamine, mephentermine sulfate) are desirable. Allergic or idiosyncratic reactions are rare, but such reactions, sometimes severe, can develop in patients receiving only 1 to 4 doses who have had no previous contact with meprobamate. Previous history of allergy may or may not be related to incidence of reactions. Mild reactions are characterized by itchy urticarial or erythematous maculopapular rash, generalized or confined to groin. Acute nonthrombocytopenic purpura with cutaneous petechiae, ecchymoses, peripheral edema and fever have been reported. One fatal case of bullous dermatitis following intermittent use of meprobamate with prednisolone has been reported. If allergic reaction occurs, meprobamate should be stopped and not reinstituted. Severe reactions, observed very rarely, include angioneurotic edema, bronchial spasms, fever, fainting spells, hypotensive crises (1 fatal case), anaphylaxis, stomatitis and proctitis (1 case) and hyperthermia. Treat symptomatically as with epinephrine, antihistamine and possibly hydrocortisone. Aplastic anemia (1 fatal case), thrombocytopenic purpura, agranulocytosis and hemolytic anemia have occurred rarely, almost always in presence of known toxic agents. A few cases of leukopenia, usually transient, have been reported on continuous administration.

Meprobamate may sometimes precipitate grand mal attacks in patients susceptible to both grand and petit mal. Extremely large doses can produce rhythmic fast activity in the cortical pattern. Impairment of accommodation and visual acuity has been reported rarely. After excessive dosage for weeks or months, withdraw gradually (1 or 2 weeks) to avoid recurrence of pretreatment symptoms (insomnia, severe anxiety, anorexia). Abrupt discontinuance of excessive doses has sometimes resulted in vomiting, ataxia, tremors, muscle twitching and epileptiform seizures. Prescribe very cautiously and in small amounts for patients with suicidal tendencies. Suicidal attempts have resulted in coma, shock, vasomotor and respiratory collapse and anuria. Excessive doses have resulted in prompt sleep, reduction of blood pressure, pulse and respiratory rates to basal levels; and occasionally hyperventilation. Treat with immediate gastric lavage and appropriate symptomatic therapy. (CNS stimulants and pressor amines as indicated). Doses above 2400 mg./day are not recommended.

Composition. Tablets, 200 mg. and 400 mg. meprobamate. Coated Tablets, WYSEALS® EQUANIL (meprobamate) 400 mg. (All tablets also available in REDIPAK® (strip pack), Wyeth.) Continuous-Release Capsules, EQUANIL L-A (meprobamate) 400 mg.

The young homemake
her underlying anxiety
and tension can surfac
and intensify under th
continuous stress of
rearing a growing fam
Especially when she's
confined to the home
its environs so much.

You can help her over
the rough spots with
reassurance and coure
Equanil can help relie
tension, ease anxiety
with little risk of seriou
side effects. Time and
experience will proba
do the rest.

Equanil
(meprobamate

Wyeth Laboratories
Philadelphia, Pa.

Photo professionally posed.

I'll scream
if I don't get away!

ou can hang on for a few more minutes, Doctor
sure I'll sneeze again.”

eeze. And sneeze some more. But with Novahis-
.P, most patients get prompt and long-lasting
om the symptoms of allergies and colds. These
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ne formulation that begins working in minutes,
ontinues to provide relief for hours. Even when
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ovahistine LP tablets, morning and evening, let
most patients breathe freely all day and all night. Use with caution in individuals with severe hypertension, diabetes mellitus, hyperthyroidism or urinary retention. Caution ambulatory patients that drowsiness may result.

Novahistine® LP decongestant

(Each tablet contains 25 mg. of phenylephrine hydrochloride and 4 mg. of chlorpheniramine maleate.)

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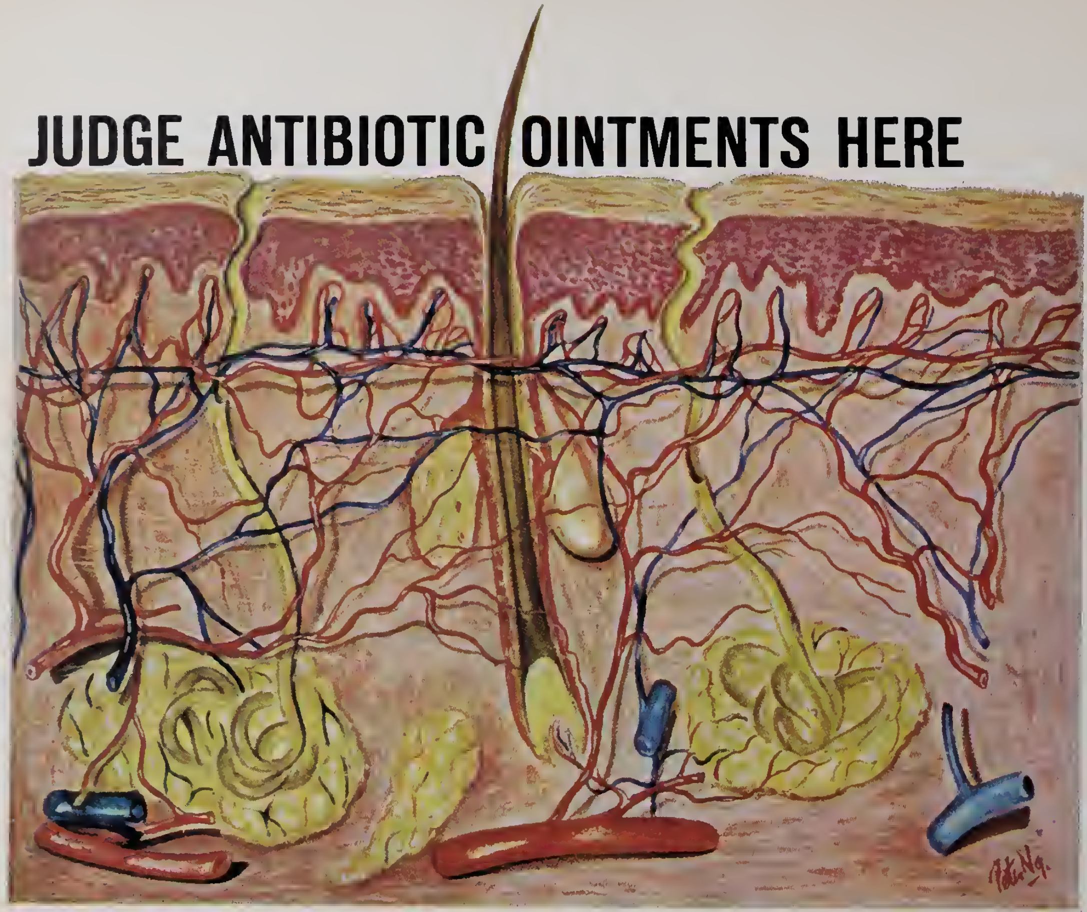

Results on skin are final proof of any topical antibiotic's effectiveness

No in vitro test can duplicate a clinical situation on living skin. 'Neosporin' (polymyxin B—bacitracin—neomycin) Ointment has consistently proven its effectiveness in thousands of cases of bacterial skin infection. The spectra of the three antibiotics overlap in such a way as to provide bactericidal action against most pathogenic bacteria likely to be found topically. Diffusion of the antibiotics from the special petrolatum base is rapid since they are insoluble in the petrolatum, but readily soluble in tissue fluids. The Ointment is bland and nonirritating.

Caution: As with other antibiotic preparations, prolonged use may result in overgrowth of nonsusceptible organisms and/or fungi. Appropriate measures should be taken if this occurs. Articles in the current medical literature indicate an increase in the prevalence of persons allergic to neomycin. The possibility of such a reaction should be borne in mind.
Contraindications: This product is contraindicated in those individuals who have shown hypersensitivity to any of its components.
Supplied: Tubes of 1 oz., ½ oz. with applicator tip, and ⅛ oz. with ophthalmic tip.
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Brand THIPHENAMIL HCl

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Trocinate relaxes all smooth muscles. Its direct action (musculotropic) does not involve the autonomic nervous system and it is not mydriatic. It is metabolized by the body and eliminated in the urine as harmless degradation products. Trocinate has a remarkable history of freedom from side-effects.

When a pure direct-acting smooth muscle relaxant is indicated, Trocinate is the drug of choice.

DIARRHEA (functional) . . . *the first 400 mg. tablet usually relieves the discomfort of diarrhea so promptly that it ceases to be a bother.*

DIVERTICULITIS—MUCOUS COLITIS . . . *the accompanying discomforts can be relieved by this direct smooth muscle relaxant.*

BLADDER SPASM . . . *relaxation is immediate. One or two tablets condition the bladder for cystoscopy in one hour.*

SPASTIC URETER . . . *the specific relaxing effect of Trocinate on the spastic ureter has been proven by animal studies and affirmed clinically. (J. Urol. 73:487-93)*

PRESCRIBING INFORMATION

WARNING: Do not give in advanced kidney or liver disease. PRECAUTIONS: Trocinate relaxes all smooth muscles. Large dosage or prolonged usage may cause feeling of weakness or can theoretically precipitate gall-bladder colic, due to relaxing the vascular and duct systems. Caution should be observed in patients with urinary bladder obstruction. DOSAGE: 400 mg. May be repeated in 4 hours. After relief, lengthen the dose frequency. (see side note)

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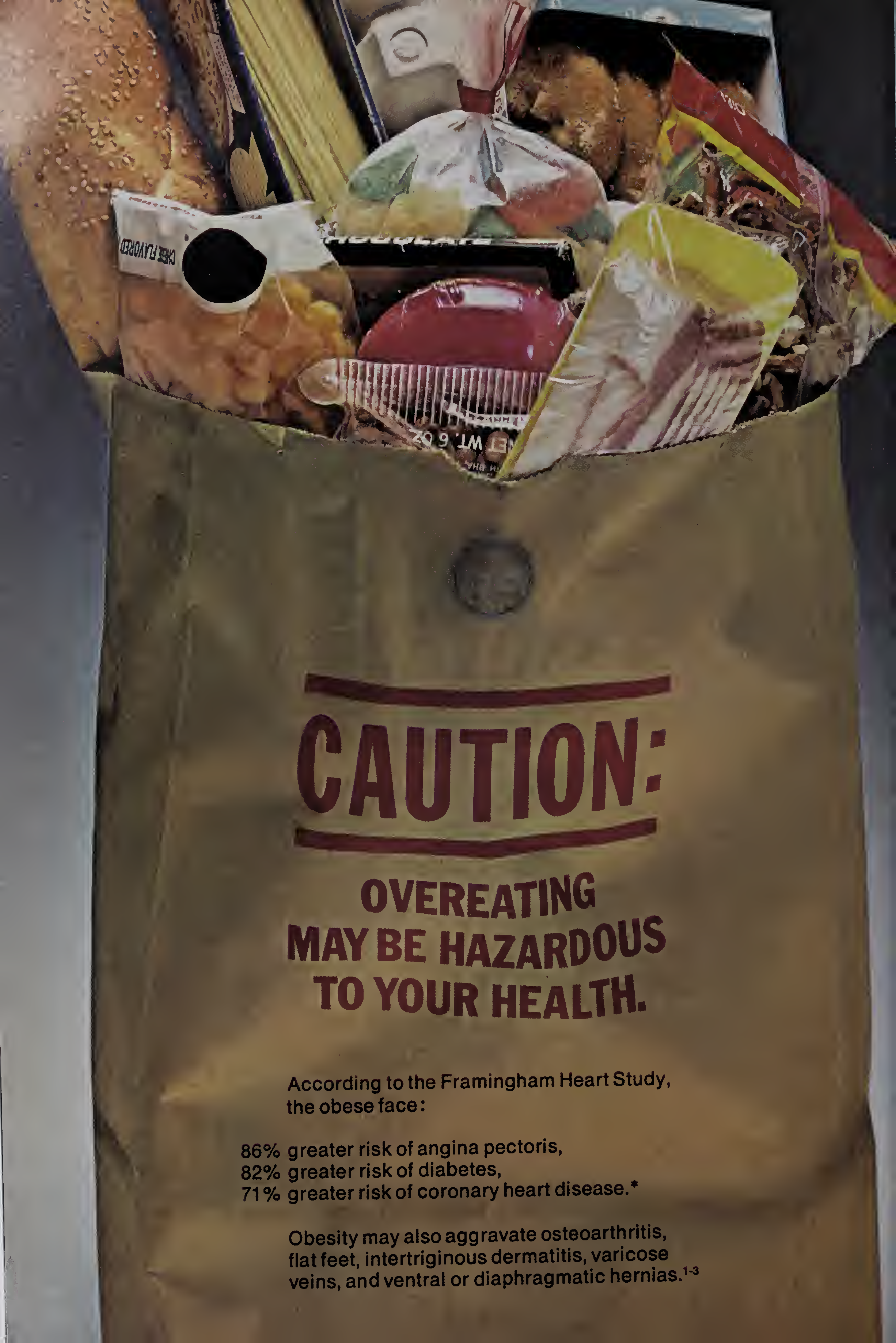
OTE: *The high therapeutic index [illegible] inate permits its administra- [illegible] in dosage sufficient to relieve [illegible] muscle spasm promptly [illegible] dosage usually creates a [illegible] tic blood level. In reducing [illegible] after relief, lengthening the [illegible] een dosage rather than lessen- [illegible] recommended dose is preferable. [illegible] pt direct action allows a [illegible] s of the first suggestion of [illegible] ptom . . . a guide to dose [illegible] to determining when treat- [illegible] complete. A prescription for [illegible] sixteen 400 mg. tablets will [illegible] spasm and leave a few [illegible] for a reserve.*


CAUTION:
OVEREATING
MAY BE HAZARDOUS
TO YOUR HEALTH.

According to the Framingham Heart Study, the obese face:

86% greater risk of angina pectoris,
82% greater risk of diabetes,
71% greater risk of coronary heart disease.*

Obesity may also aggravate osteoarthritis, flat feet, intertriginous dermatitis, varicose veins, and ventral or diaphragmatic hernias.[1-3]

If you are considering weight reduction, consider

Preludin®

phenmetrazine hydrochloride Endurets® prolonged-action tablets

Often effective

Controlled studies in a general patient population have shown that when Preludin is used with diet, the rate of weight loss exceeds that obtained by placebo and diet.

Long acting

Slow, even release of the active principle usually suppresses appetite continuously for about 12 hours.

Once-a-day dosage

One Endurets tablet after breakfast. It helps reduce weight and costs, conveniently.

For contraindications, warning, precautions, and adverse reactions, please see the full prescribing information.
It is summarized on this page.

Where there's no will there's a therapeutic way.

*Among persons 20% or more overweight as compared with median weight for persons of like height and sex.
1. Kannel, W.B., *et al.*: *Circulation* 35:734, 1967.
2. Thomas, H.E., Jr., *et al.*: *Med. Times* 95:1099, 1967.
3. Albrink, M.J., in: Beeson, P.B. & McDermott, W. (eds.): *Cecil-Loeb Textbook of Medicine*, ed. 12, Phila.: W.B. Saunders Co., 1967.

Preludin®
phenmetrazine hydrochloride

Preludin is indicated only as an anorexigenic agent in the treatment of obesity. It may be used in simple obesity and in obesity complicated by diabetes, moderate hypertension (see Precautions), or pregnancy (see Warning).
Contraindications: Severe coronary artery disease, hyperthyroidism, severe hypertension, nervous instability, and agitated prepsychotic states. Do not use with other CNS stimulants, including MAO inhibitors.
Warning: Do not use during the first trimester of pregnancy unless potential benefits outweigh possible risks. There have been clinical reports of congenital malformation, but causal relationship has not been proved. Animal teratogenic studies have been inconclusive.
Precautions: Use with caution in moderate hypertension and cardiac decompensation. Cases involving abuse of or dependence on phenmetrazine hydrochloride have been reported. In general, these cases were characterized by excessive consumption of the drug for its central stimulant effect, and have resulted in a psychotic illness manifested by restlessness, mood or behavior changes, hallucinations or delusions. Do not exceed recommended dosage.
Adverse Reactions: Dryness or unpleasant taste in the mouth, urticaria, overstimulation, insomnia, urinary frequency or nocturia, dizziness, nausea, or headache.
Dosage: One 25 mg. tablet b.i.d. or t.i.d. Or one 75 mg. Endurets tablet a day, taken by midmorning.
Availability: Pink, square, scored tablets of 25 mg. for b.i.d. or t.i.d. administration, in bottles of 100 and 1000.
Pink, round Endurets® prolonged-action tablets of 75 mg. for once-a-day administration, in bottles of 100 and 1000.
(B)R3-46-560-B

For complete details, please see full prescribing information.

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Summer time...monilia time!

No wonder you see so many more cases of vaginal moniliasis during this season. A damp, warm bathing suit provides a perfect breeding ground for fungal invaders. But your patients need not suffer the pain, the embarrassment and the discomfort of these stubborn infections. Nor the disappointment which comes when they find "the cure didn't take."

Candeptin avoids disappointment.

With CANDEPTIN, you and your patients have good reason for confidence. *A single, 14-day course of therapy* with CANDEPTIN is usually sufficient to eradicate the invader, while rapidly relieving itching, burning, discharge and malodor. And CANDEPTIN is "cidal" as well as "static"; 100 times more potent than nystatin *in vitro,* it has achieved culture-confirmed cure rates of 90% and more (even in notoriously difficult pregnant patients). Why not maximize your chances of success by adopting effective, well-tolerated CANDEPTIN as your agent of first choice?

Agent of first choice

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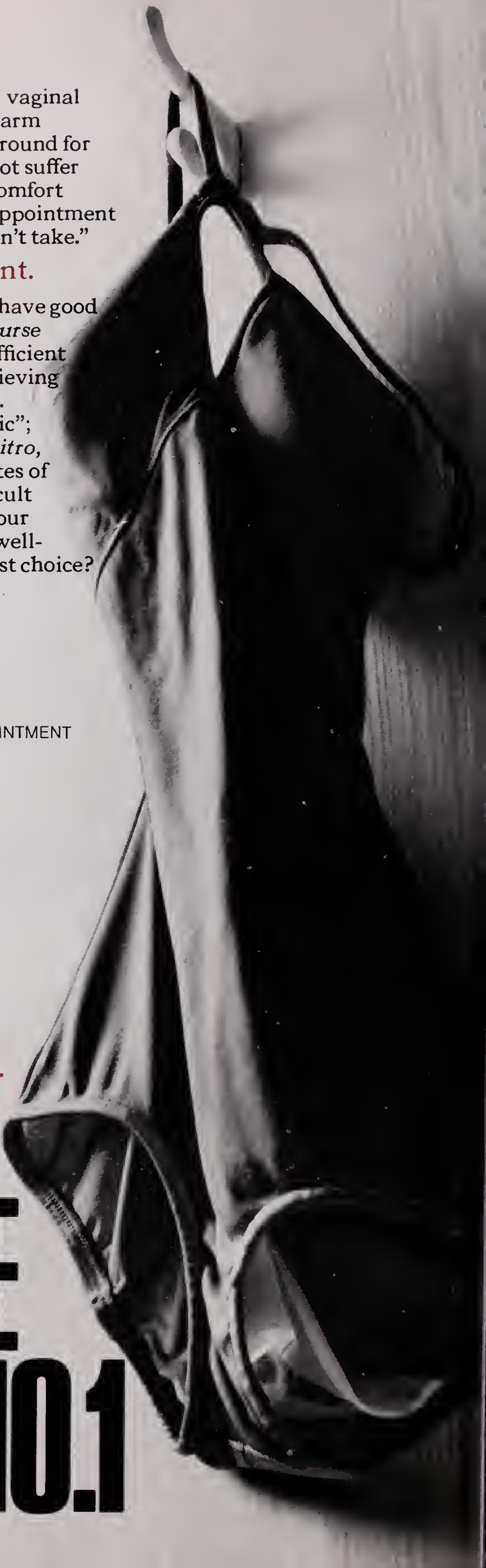
candicidin VAGINAL TABLETS/OINTMENT



the fortnight fungicide for

PRIVATE ENEMY NO.1

Candeptin® CANDICIDIN

Formula:
CANDEPTIN Vaginal Ointment contains a dispersion of candicidin powder equivalent to 0.6 mg. per gm. or 0.06% candicidin activity in U.S.P. petrolatum. 3 mg. of candicidin is contained in 5 gm. of ointment or one applicatorful. CANDEPTIN Vaginal Tablets contain candicidin powder equivalent to 3 mg. (0.3%) candicidin activity dispersed in starch, lactose and magnesium stearate.

Indications:
Vaginal moniliasis due to Candida albicans and other Candida species.

Contraindications:
Patient sensitivity to any of the components. During pregnancy manual tablet insertion may be preferred since the use of the ointment applicator or tablet inserter may be contraindicated.

Caution:
Clinical reports of sensitization or temporary irritation with CANDEPTIN Vaginal Ointment or Vaginal Tablets have been extremely rare. To avoid reinfection, it is recommended that the patient refrain from sexual intercourse during treatment or the husband wear a condom.

Dosage:
One vaginal applicatorful of CANDEPTIN Ointment or one Vaginal Tablet is inserted high in the vagina, twice a day, in the morning and at bedtime, for 14 days. Treatment may be repeated if symptoms persist or reappear.

Dosage forms:
CANDEPTIN Vaginal Ointment is supplied in 75 gm. tubes with applicator (14-day regimen requires 2 tubes). CANDEPTIN Vaginal Tablets are packaged in boxes of 28, in foil, with inserter—enough for a full course of treatment. Store under refrigeration.

Federal law prohibits dispensing without prescription. CANDEPTIN is a registered trade-mark of Julius Schmid, Inc.

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Re-
lief!

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Book Reviews

(*Continued from page 14*)

Symposium on Ocular Therapy. Volume IV. Under the auspices of the American Academy of Ophthalmology and Otolaryngology and the Association for Research in Ophthalmology. Edited by Irving H. Leopold, M.D. Price, $14.00. Pp. 145, with 13 illustrations. St. Louis: Mosby, 1969.

The practicing ophthalmologist is deluged by journals, professional meetings, hospital conferences, tape recordings, textbooks, journal digests, reprints, surveys, etc., in an attempt to keep abreast of latest developments in his field. Selective study is difficult with such a plethora of material to choose from. This volume does not appear to warrant the hard cover and substantial price because much of the information presented here can be found in journal articles.

Two long articles by Leopold discuss in general terms drug metabolism and ophthalmic antibiotics and antifungal agents. These comprehensive reviews give validity to the Symposium and the practicing ophthalmologist would do well to read them. Other informative papers include "Carbonic Anhydrase Inhibitors" by P. Ellis and "Anti-inflammatory Agents" by H. Kaufman. Lesser papers discuss toxicity of phospholine iodide, retinal vascular occlusions, drug-induced pseudotumor cerebri, and uveitis therapy.

The Symposium is neither comprehensive nor current and in spite of the outstanding papers mentioned it cannot be used as a textbook of ocular therapy. The Annual Review of Toxicology and Pharmacology in the AMA's *Archives of Ophthalmology* contains most of the material included in the Symposium in addition to much material not covered.

Henry J. Starr, M.D.

Handbook of Psychiatry. Edited by Philip Solomon, M.D., and Vernon D. Patch, M.D. Price (paper), $7.00. Pp. 623. Los Altos, Calif.: Lange, 1969.

Psychiatry has joined 16 other subjects as grist for the Lange mill. It was a long time coming; one of its volumes, "Physician's Handbook," is now in its fifteenth edition. "Psychiatry" is a welcome addition.

The scope of the book is wide; it could be termed encyclopedic. And that is precisely its value, as an authoritative presentation of the many facets of a specialty that is growing in scope and influence both in medicine and in the larger arena of social concern.

It is divided into 3 sections: (1) psychiatric skills, theory, and background data; (2) psychiatric symptoms, entities, and fields; and (3) psychiatric treatment. Every conceivable aspect of psychiatry is touched, some more thoroughly than others. Specific overemphases and deficiencies could be mentioned, but it would be nitpicking; how much can you demand of a book of less than 700 pages? Besides, every chapter is followed by a good selection of references.

Intended for practicing (nonpsychiatrist) physicians and psychiatric residents, it is an excellent reference work for medical students and others (social workers, psychologists, clergymen, nurses, and teachers) interested in psychiatric aspects of their occupations. And psychiatrists will find it a valuable source of information when studying for their Boards. The chapters on differential diagnostic signs and symptoms, history of psychiatry, and psychopharmacology are particularly useful.

A second edition is planned in 2 years. Don't wait for it; this one will serve very well for at least that long.

Louis F. Rittelmeyer, Jr., M.D.

Proceedings of the Centennial Symposium Manhattan Eye, Ear and Throat Hospital. Volume One. Ophthalmology. Edited by Arnold I. Turtz, M.D. Price, $27.50. Pp. 331, with 247 illustrations. St. Louis: Mosby, 1969.

For those who attended the conference, this is the best set of notes they could possibly have. For those who did not attend, this book is the next best thing. In some respects it is better: One can reread a statement or study a diagram longer. Tables which could not possibly be appreciated at the conference can be studied thoroughly. An adequate list of references is given after most of the articles which was not available to the listeners. Although the colored slides at the conference were, of course, more pleasing than the black and white reproductions in the book, nearly every picture is clear and illustrative. The printed papers are more succinct, in some cases, than were the verbal presentations.

The topics treated are varied: ocular pharmacology, pediatric ophthalmology, ophthalmic plastic surgery, new diagnostic and therapeutic techniques, new and controversial surgical procedures, and complications of surgery. Coverage is neither as complete nor as unbiased as one might expect in a text, but that was not intended. There are 71 excellent contributions. The speakers were well selected and the book is well edited.

Paper printing and binding are excellent.

That conference and this book are fitting tributes to the Manhattan Eye, Ear and Throat Hospital on the occasion of its one hundredth anniversary of service to patients and scholars.

Robert P. Kling, M.D.

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of the District of Columbia

July 1970

VOLUME XXXIX • NUMBER 7

Walter Reed Army Medical Center Number

THIS IS THE SIXTH of a sixth series of special numbers of the MEDICAL ANNALS, the scientific material for which is supplied by medical institutions and scientific organizations in the Washington Metropolitan Area. For the WALTER REED ARMY MEDICAL CENTER NUMBER the Editorial Board is indebted to Colonel Raymond W. Blohm, MC, USA, Consulting Editor of the MEDICAL ANNALS, who secured the papers which appear in this issue.

Major Complications Following Combat Injury

The Contribution of Surgical Research in Delineating the Problems and Improving Therapy

MAJOR JOSEPH JUDSON McNAMARA, MC, USA,* AND MAJOR JOHN F. STREMPLE, MC, USA†

THE MOST UNIQUE ASPECT of surgical research presented to the U.S. Army is that related to the trauma of combat injuries. Nowhere in civilian experience does there exist any analogy to the combat situation either in terms of patient population, magnitude of injury, mechanism of injury, or number of patients involved.

We who are engaged in surgical research are committed to reducing the morbidity and mortality of soldiers injured in combat. Of prime importance in establishing a meaningful research program is the correct definition of the major problems following injury. Having identified the problems, appropriate programs can then be established to investigate them effectively.

Role of Surgical Research

Research relating to combat injuries involves major efforts both at the clinical level, in patients, and at a more basic level in the laboratory.

Clinical surgical research involves careful observation of the injured patient by a number of increasingly sophisticated physiologic and biologic parameters. Some, currently employed, include a variety of blood chemical tests, viscosity determinations, coagulation parameters, thromboelastography, pulmonary function studies, and detailed gastric secretory studies. The last includes fractionation and chemical analysis of gastric mucus. These determinations not only aid in defining the magnitude of the problem but may occasionally give some insight into their pathogenesis. Furthermore, they are usually of direct benefit in the care of the patient. Clinical research then is concerned with solving problems immediately related to the care of the patient. It is applied investigation rarely dealing in depth with the etiology of a disease state but rather attempting to quantitate surgical problems and improve immediate methods of handling those problems.

The major clinical research effort by the Division of Surgery at Walter Reed Army Institute of Research during the past few years has been concentrated in support of its Trauma Study Section at the 24th Evacuation Hospital in Vietnam. It is from this unit that clear definitions of many of the most serious complications of injury have emerged.

The basic science laboratory plays an equally important role in investigating postinjury problems. It is through a thorough understanding of appropriate areas of laboratory research that meaningful programs designed to investigate the actual etiology of such problems may be established. This is the primary function of the Division of Surgery at WRAIR in Washington, D. C.

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Here the facilities for investigating these problems in the laboratory exist. This includes not only the physical presence of appropriate laboratory equipment and space, but even more important a basic science capability in a variety of disciplines. This allows for the organization of major programs which bring together multidisciplinary groups, a necessity with the current level of development and complexity of laboratory research.

Definition of Surgical Research Problems

Now, what are the problems? Table 1 outlines the principal causes of death in 100 consecutive battle casualties reaching the 24th Evacuation Hospital alive during 1969. The commonest cause of death was persistent hemorrhage and shock. Yet this group is of least concern at the present stages of surgical resuscitation. These patients by and large represent essentially mortal injuries and were rarely seen prior to the advent of helicopter evacuation. They involve mutilating multisystems injuries such as massive multi-extremity injuries and central liver injuries. The patients arrive in extremis and deteriorate rapidly, primarily because, at the current state of the art and science of surgery, there is no method of correcting the massive anatomic destruction. From the table and the clinical data accumulated the commonest and most serious complications in surgically salvageable patients are:

TABLE 1: Causes of 100 Consecutive Deaths at the 24th Evacuation Hospital October 1968–August 1969

Hemorrhagic:		47
Acute hemorrhage and shock with death during resuscitation and surgery	39	
Sudden late postoperative hemorrhage	4	
Bleeding tracheostomy	1	
Stress ulcer	3	
Pulmonary:		29
Progressive insufficiency	23	
Fat embolism	5	
Aspiration with jaw wired	1	
Sepsis:		16
Peritonitis after abdominal injury	9	
Massive lower extremity and pelvic injury	4	
Cerebritis	1	
Source?	2	
Miscellaneous:		8
Late intracranial complications	3	
Pancreatitis following trauma	1	
Aplastic anemia from Chloromycetin®	1	
Unexplained (patients with massive multisystems injuries)	3	

Pulmonary insufficiency. This is a major cause of mortality and morbidity from injury and the commonest cause of death in surgically salvageable patients. Numerous factors contribute to the pulmonary problems, including many already recognized, such as atelectasis, aspiration, pneumonia, fat embolism, and oxygen toxicity. Nevertheless, the evidence is overwhelming that something relating to massive injury and massive transfusion compounds these other complications and results in this inordinately serious problem.

Infection. Sepsis is another major problem. This frequently is a direct consequence of the injury and the initial surgery. Soldiers with relatively minor injuries no longer develop significant wound infection or sepsis. It is in the soldier with massive multisystems injuries that control of infection remains difficult. Minor modifications in the technical management of certain injuries appear to have reduced this complication in isolated types of injuries, particularly those involving the colon.

Important clinical observations have established that combat injury sepsis is nearly always caused by endogenous gram-negative bacteria. This is regardless of the initial injury or subsequent complications or organ-system involved. In-depth investigation of host-organism relationships is pertinent to this current problem.

Postinjury catabolic wasting. Wasting is a major problem and is frequently inseparable from major septic complications. Weight losses of up to 50 per cent of the preinjury body weight are encountered. The mechanism by which this wasting is mediated is unknown. A current laboratory program to investigate this problem is still in the planning phases because of the complexities of the problem. A recent clinical trial of intravenous hyperalimentation in Vietnam appears to offer major protection against such wasting and to reduce significantly the loss of body weight, caloric wasting, and negative nitrogen balance.

Postinjury gastrointestinal hemorrhage. "Stress ulcer" occurs in slightly under 1 per cent of combat casualties but represents a disastrous complication in approximately 5 to 7 days following injury at a critical time in the recuperative period. The occurrence of gastrointestinal bleeding following the stress of massive injury and attendant complications portends a nearly 50 per cent mortality. A comprehensive prospective study of stress ulcer has just been completed by the Trauma Study Section in Vietnam and promises to provide the most complete and detailed clinical and laboratory evaluation of this problem ever accomplished.

Coagulopathy. Clinical experience in Vietnam has shed light on the diffuse oozing coagulopathy which occurs commonly after massive injury and massive transfusion. The pathogenesis of the defect is due to either 1 or a combination of the following 3 factors:

1. Dilution of all clotting factors, no single one low enough to explain the coagulopathy.
2. Qualitative defect in platelet function.
3. Transient disseminated intravascular coagulation with resulting consumption coagulopathy.

Regardless of the mechanism, clinical experience demonstrates that sequential administration of 4 to 8 units of fresh blood may correct the defect.

Discussion

Other problems relating to clinical care of combat injuries occur. What do these mean in terms of the laboratory effort? They point to the areas toward which laboratory investigation must be directed. However, in the laboratory the program of study must be more broadly grounded than dealing directly with the apparent clinical problem. The program effort must be directed to investigating the effect of trauma on an organ system or the body as a whole. It may be just as important in identifying the etiology of a problem to recognize why some patients do not develop certain complications as why a few do. Our ongoing clinical research program continues to define the problems in greater detail and to provide a more complete clinical background for establishing major research programs in the basic research laboratory.

Summary

The role of surgical research in the Army has been defined.

The problems being investigated have been identified by the clinical research unit in Vietnam. These include pulmonary insufficiency, sepsis, postinjury catabolic wasting, stress ulcer, and coagulopathy.

A multidisciplinary approach to these problems by the Division of Surgery at WRAIR, based on programs designed to investigate the influence of trauma on the organ systems concerned, allows comprehensive basic investigation of the etiology of these problems.

Are GP's a Luxury?

TRAINING FOR GENERAL PRACTICE is seen both as a growing trend in response to public demand and as a luxury of questionable value by participants in the Colloquium on Reform in Medical Education.*

Dr. Ernst F. Pfeiffer, Chairman of the Center for Internal Medicine at Ulm University, Germany, pointed out that patients, as a general trend, want general practitioners as in the past and that so long as affluence is increasing this trend will increase. But Dr. John R. Ellis, professor at the London Hospital Medical College says that "the generalist is now difficult to produce, cannot be produced in quality in large numbers, and cannot any longer be the basic common unit of medical care."

"The general practitioner as we know him and have known him," Dr. Ellis continued, "is a luxury that we (in Britain) are not affluent enough to afford in the future. . . ." The general doctor's role as a comforter will fall to the medical social worker; his role in diagnosis, to the nurse; his role of emergency doctor, to the hospital. "His role as a generalist will remain, but to fulfill it he will be fewer in numbers, take longer perhaps to produce than any other member of the medical profession, and will function from premises containing facilities that he can adequately use."

The increasing gap between supply and demand in medical care, Dr. Ellis says, is producing everywhere in the world a concentration of medical resources with fewer but much larger hospitals and with the doctors outside the hospitals grouping together in facilities built for this purpose. "I think we have to face the establishment of a specialist-based, team-based pattern of medical care, rationalized into a service. This, in a sense, is community medicine as we define it in Britain."—*News* from the National Academy of Sciences, May 26, 1970.

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* Sponsored by the Fogarty International Center for Advanced Study in the Health Sciences of the National Institutes of Health and by the Board on Medicine of the National Academy of Sciences and held at the National Institutes of Health in Bethesda, Md., April 9–11, 1969.

Emerging Medical Problems in Vietnam

LT. COLONEL ANDRE J. OGNIBENE, MC, USA*

This report will focus on more recent problems in the management of the diseased patient in Vietnam and will allude only briefly to those existing and continuing problems in malaria, melioidosis, and parasitism. It should be emphasized that, while the discussion centers on newer medical problems, the major portion of medical diseases occurring in U. S. troops in Vietnam does not represent serious continuing or threatening problems in care.

A review of the results in the treatment and management of malaria in 1969 illustrates the progress made. Over 6,000 malaria patients were admitted to Army hospitals in Vietnam in 1969. In this group there were 6 deaths, and more than 5,000 patients were returned to duty within 30 days. The average length of hospital stay is estimated at 5 days for vivax malaria and 18 days for falciparum malaria. As indicated by these figures prophylaxis still remains a problem. In vivax malaria this is simply related to the emphasis on taking the CP tablet (chloroquine 300 mg., primaquine 45 mg.), but for falciparum malaria the problem is more complex. The addition of Dapsone®, 25 mg. daily, to prophylactic programs because of emergence of chloroquine-resistant strains of falciparum malaria did offer promise in the reduction of the incidence of falciparum infections. However, a serious side-effect believed to be associated with this sulfone arose in 1969.

Historically, Dapsone therapy in lepers was associated with certain complications, and one of those described was designated "mononucleosis-like syndrome."[1] However, in 1955 Leiker[2] at the Leprosarium at Meie recognized true agranulocytosis in one of 2 patients who developed "mononucleosis syndrome." In 1958 McKenna and Chalmers[3] clearly established a relationship between agranulocytosis and the administration of Dapsone. In early 1969 a strong recommendation was made to incorporate Dapsone prophylaxis for all U. S. troops in Vietnam, and an increasing number of troops were placed on this medication. During the year 15 patients with agranulocytosis were admitted to Army hospitals, and all of these were on Dapsone prophylaxis. None of these patients was on CP prophylaxis alone. Seven of the 15 died with overwhelming sepsis. All of the patients had been on Dapsone, 25 mg. daily, from 3 weeks to 3 months prior to the onset of their disease. Agranulocytosis has not occurred during the standard treatment of falciparum malaria with the quinine-pyrimethamine-Dapsone regimen in which Dapsone is given for a period of 28 days. Leukopenia, however, is common in falciparum malaria and during the use of this treatment schedule. Leukopenia is now being used as a guide to halting Dapsone therapy in the malaria patient. There are insufficient data, however, to state whether leukopenia actually precedes the onset of agranulocytosis and may be unrelated. The syndrome probably develops abruptly.

The most striking finding in the bone marrow of these patients is the total absence of the granulocytic series. The erythroid elements and megakaryocytes appear normal in number, and the peripheral platelet count and hematocrit are generally maintained. Levine and Weintraub[4] described a pseudoleukemia bone-marrow picture in a patient who was recovering from agranulocytosis induced by Dapsone. This occurred in one patient in Vietnam prior to the development of agranulocytosis. Despite the cessation of Dapsone prophylaxis in this patient he progressed to agranulocytosis and death due to sepsis on the twenty-sixth day of hospitalization.

A designation of maturation arrest was utilized to describe the initial bone-marrow findings in 5 of the 15 patients. In 5 of the fatal cases total absence of the granulocytes was noted on initial bone-marrow examination, but this was also present in 4 of the 7 survivors who had a bone-marrow examination. Sepsis was primarily due to *Pseudomonas aeruginosa*, although *Staphylococcus aureus*, *E. coli*, and *Aerobacter aerogenes* were noted. One patient with a positive blood culture survived. In this individual *Diplococcus pneumoniae* isolated from the blood was sensitive to penicillin. In all of the surviving patients the blood cultures remained sterile during the course of the illness. Twelve patients of the group developed an ulcerative pharyngitis during the course of the illness, and it was the most common presenting manifestation. A necrotizing pyoderma was present in 3 patients. The development of severe side-effects from Dapsone has resulted in limitations in its use for malaria prophylaxis in Vietnam. The drug is no longer required for U. S. troops and is used only when combat manpower loss from falciparum malaria requires significant action to reduce the attack rate. Further investigation is urgently required to establish the relation of Dapsone and agranulocytosis.

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* Assistant Chief, Department of Medicine, Walter Reed General Hospital, Washington, D. C. 20012; formerly Medical Consultant, Headquarters, United States Army, Republic of Vietnam (1969).

Problems with bacterial infections have long been present in Vietnam, and an ever-present problem of melioidosis remains with us. Treatment schedules have been modified to reduce kanamycin usage and abort the drug toxicity which was noted in these patients. Tetracycline, sulfonamides and chloramphenicol all have shown clinical effectiveness and are utilized in that order in Vietnam. In 1969, however, other organisms were recognized as actual and potential hazards to the U. S. soldiers in Vietnam. Confirmed isolations of *Serratia marcescens* and other Enterobacteriaceae from patients from Vietnam were formerly quite rare. However, early in 1969 8 patients with *Serratia marcescens* sepsis were identified, and in this group there were 5 deaths.[5] All of the patients were severely wounded with complicated surgical disease and had required assisted mechanical ventilation. Reports from hospitals in the United States concerning the prevalence of this organism have indicated that sepsis due to *Serratia marcescens* occurs in the setting of multiple antibiotic therapy and a requirement for assisted ventilation.[6] In a combat zone where this category of patient is all too frequent the appearance of this organism as an additional complicating feature was most distressing. One patient with a minor uncomplicated extremity wound developed Serratia pneumonia and ultimately died, further emphasizing the potential virulence of this organism as a nosocomial agent. The frequent isolation of this organism from intermittent positive pressure respirators and the isolation of this organism from sputum of patients utilizing these machines prompted a survey of mechanical respirators at a large surgical center in Vietnam. *Serratia marcescens* could not be isolated from these respirators. The source of the organism has not been clarified. Previous studies with the organism have indicated that once the organism is entrenched it can be found in jugs of saline used for irrigation, and it has been isolated from air samples in operating rooms and on wards. Unfortunately, daily washing, weekly sterilizations, daily nebulizations with 0.25 per cent of acetic acid, and daily gas sterilizations have all been found to be inadequate in clearing the organism from equipment.[6]

A review of prevalence of the organism in blood cultures taken at Long Binh, Vietnam, from the 24th Evacuation Hospital, 93rd Evacuation Hospital, and 74th Field Hospital was undertaken in mid-1969. A total of 2,612 blood cultures were submitted over the first 10 months, and 321 organisms were isolated from these blood cultures. *Serratia marcescens* was grown in 101 of these, and all cultures came from surgical wards. This represented 31 per cent of the positive blood cultures examined by the Ninth Medical Laboratory Mobile at Long Binh during the period. These 101 isolates were obtained from 40 patients. The hospital distribution indicated an increased prevalence at the 24th Evacuation Hospital, which is a specialized surgical center. Multiple antibiotic combinations are generally utilized on surgical patients and include high doses of penicillin generally combined with streptomycin, colistin, and/or ampicillin. Kanamycin is used quite frequently, and at the Neurosurgical Center penicillin is generally used in combination with chloramphenicol. Follow-up of patients with positive blood cultures has not yet been accomplished and is extremely difficult because of rapid evacuation and relatively short length of stay. The emergence of this organism as a virulent nosocomial agent has prompted action to develop within the hospitals in Vietnam an active infections committee.

Routine culturing of operating rooms and surgical wards has been established. Vigorous action is being undertaken to foster strengthened control programs in relation to hospital infections. Further data are sorely needed relating to the clinical aspects and prevalence of Serratia infections in Vietnam. In addition, the combined use of all available broad-spectrum antibiotics in the course of treatment is not uncommon in the severely wounded. This practice allows for the emergence of resistant Serratia infection. A reappraisal of the antibiotic regimens in the wounded patient in Vietnam is required if control of Serratia infections is to be achieved.

Another major cause of illness and indeed a source of confusion to the physician is the problem of amebiasis. Questions arise as to which drug regimens should be used. There is some lack of uniformity of opinion in standard texts. There is some question as to whether soldiers actually should finish a 2- to 3-week course or any prolonged course of drugs. The requirement for the use of chloroquine or emetine to cover the possi bility of extra-intestinal involvement in what appears initially as a simple case of intestinal amebiasis has not been established.

The emergence of metronidazole (Flagyl®) in the treatment of amebiasis seemed to offer a solution to some of the treatment dilemmas but has posed other questions and other problems. As previously reported[7] Flagyl has been found in Vietnam to be equally as effective as any treatment program previously utilized for both intestinal and extra-intestinal amebiasis. It appears directly amebicidal both in the bowel lumen and in the tissues. It is a single drug requiring only a 5- to 10-day course and has had few side-effects and no definite toxic effects. Preliminary studies are being performed at various hospitals in Vietnam. A study has been completed at the 29th Evacuation Hospital on a series of 33 patients. Several of the patients were severely ill, particularly those with hepatic abscesses. All those that were able to tolerate Flagyl orally showed marked improvement. However, it must be emphasized that in any case in which oral tolerance is poor emetine intravenously continues to be lifesaving in many cases. Under no circumstances should one consider Flagyl a substitute of parenteral emetine in the extremely toxic amebiasis patient. In the series completed, 31 of 33 patients were greatly improved and asymptomatic with the use of 750 mg. of Flagyl thrice daily for 5 to 10 days. Sigmoidoscopy and smears of rectal mucus seemed to be the most important diagnostic procedures for obtaining a definitive diagnosis of amebiasis. In patients with hepatic involvement who were able to tolerate Flagyl orally the response was equally as dramatic as that seen after emetine. Temperatures became normal in 24 to 48 hours, with obvious improvement in general well-being. Pain and tenderness over the liver decreased steadily, and the patients were able to move about easily on the second day. Right-flank masses were actually present in 2 patients and became progressively smaller, and within 5 to 7 days the patients were well enough for transfer to Japan for radioactive scanning. In the 4 patients with hepatic abscesses treated with Flagyl 3 scans confirmed the presence of an abscess. These patients recovered without difficulty. The fourth patient with a negative scan had had an extremely tender flank mass and high fever, but apparently the abscess had resolved by the time scanning was performed.

The symptomatic intestinal-disease group of 25 patients were having between 5 and 20 stools a day associated with cramping, rectal urgency, and bloody mucus. Improvement was noted within hours of the first dose of Flagyl, and rectal urgency usually cleared up by the first day. Diarrhea and abdominal discomfort ceased by the second or third day. By the fifth day 60 per cent of the patients were totally asymptomatic. This figure increased to 92 per cent by the tenth day of hospitalization. On admission sigmoidoscopic abnormalities were noted in 23 of the 25, and by the time of discharge between the sixth and eleventh day 20 of the 23 had returned to normal on Flagyl therapy. While the efficacy of Flagyl in the treatment of amebiasis in Vietnam has not been definitely established, these preliminary reports suggest that an additional drug is available for the management of this disease in Vietnam. The problem of amebiasis may find some resolution in the continued use of Flagyl. Studies in this area are presently going on in hospitals in Vietnam. Further reports will provide the information needed to specifically state whether we have actually found an effective treatment for amebiasis.

Finally, on the list of emerging problems in 1969 in Vietnam is that of convulsive disorders. It became clear in 1969 that the major portion of the high incidence of convulsive disorder in Vietnam was due to Composition C4-induced seizures.[8] Composition C4 is a puttylike explosive material that is widely used in Vietnam by U.S. troops. It is found in Claymore mines and in standard demolition kits. Detonation is usually accomplished with a blasting cap. The main chemical component for Composition C4 is RDX, which has been used as an explosive since World War I and chemically is cyclotrimethylenetrinitramine, which is similar to TNT. When RDX is suspended in 80 per cent ethanol and reduced, the products of its reduction include methylamine, nitrous acid, ammonia, and formaldehyde. It has become common knowledge among field troops that ingestion of a small amount of this substance will produce a "high" very similar to the ingestion of ethyl alcohol. The exact frequency of ingestion of this material is not known. However, several serious intoxications from this agent have been seen in every major military hospital in the Republic of Vietnam. The toxic effect of C4 has also involved civilian communities in the United States, and convulsions have occurred in factory workers who have handled and packed this explosive.

Studies by Knepshield, Stone, and others[8, 9] have clarified the clinical picture. Patients are generally admitted to the hospital for the management of generalized grand mal seizures, and when initially seen most of them are confused and postictal. Generalized seizures lasting 1 to 2 minutes may occur, and between these seizures a state of consciousness varying from coma to lethargy has been noted. There are neuromuscular irritability, muscular twitching, hyperactive reflexes, myalgias, frontal headaches, nausea, vomiting, gross hematuria, and in 3 patients severe renal failure requiring hemodialysis. Generally, within 48 hours patients were able to respond to their environment and answer simple questions and follow directions. Orientation, concentration, recall, and memory for recent and remote events remain impaired for approximately 1 week when the sensorium is clear. Remote memory may continue to be deficient for some time. Electroencephalograms done 3 months following ingestion in a group of 18 patients were normal, and neurologic examinations were normal. The most striking laboratory abnormality is an elevated SGOT, but there is no evidence of hepatic involvement. It appears that the transaminase appearing in the blood has its origin in the muscle. A mild acute tubular necrosis would best explain the transient hematuria and azotemia seen in some patients and the marked renal failure seen in a few others. Light and electron microscopy in renal biopsies in 2 patients have been anatomically normal. The actual cause of renal failure with the ingestion of this material is unknown at this time. Army physicians in Vietnam now recognize C4 intoxication as probably the most common cause of recurrent generalized seizures in Vietnam, and all physicians newly assigned to Vietnam should be made aware of this intoxication. Because of the actual hazards of C4, present manuals which describe it as a relatively harmless compound are being modified. Troops utilizing C4 must not use it as a fuel for cooking purposes. With continued emphasis on the toxicity of this material the incidence of seizures induced by it in Vietnam is being reduced.

The 4 areas that have been discussed are (1) agranulocytosis induced by Dapsone prophylaxis for falciparum malaria, (2) emerging infection with *Serratia marcescens* and other unusual organisms, (3) the development of a convulsive disorder related to the ingestion of Composition C4, and (4) the treatment of hepatic and intestinal amebiasis and the use of Flagyl.

The first step in the resolution of these problems has been taken—recognition. Action is now being taken to further clarify and ultimately control these problems which are emerging as threats to the U. S. soldier in Vietnam.

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A Tissue Adhesive in Neurosurgery: Experience with Isobutyl 2-cyanoacrylate

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THE USE OF A TISSUE ADHESIVE for surgical procedures has been an attractive possibility for many years. With the discovery of the remarkable adhesive and bonding action of the alkyl cyanoacrylate monomers just 10 years ago, the whole field of biologic "glues" became a reality. After the first monomer, methyl 2-cyanoacrylate, had been studied at the Eastman Laboratories, many homologues have been prepared and studied in this country, Europe, and Japan. It has been the privilege of the Neurosurgical Service at Walter Reed General Hospital and her research arm at Walter Reed Army Institute of Research to study and evaluate these various compounds with regard to the central nervous system as they have become available.

In neurosurgery the ideal tissue adhesive would have the following properties: (1) no toxicity to neural and vascular tissue, (2) strong and rapid bonding, (3) adherence to bone, dura, fascia, muscle and synthetic substitutes, (4) ability to bond in the presence of blood and cerebrospinal fluid, (5) bacteriotoxicity, and (6) simplicity of application.

Critical review of all data accumulated in the clinical and experimental studies on substituted cyanoacrylate tissue adhesive suggests both an optimistic as well as a cautious approach to clinical application. It is clear today that none of these materials is meant for routine surgical techniques. Physiologic tissue adhesives are not physiologic at all, but in many instances their positive properties far outweigh the negative qualities related to the trauma of implantation and histotoxicity. To determine this proper perspective is the goal of this review.

Experimental Studies

Experimental studies in our laboratory have shown that isobutyl 2-cyanoacrylate (IBC)‖ is at this time the most suitable adhesive for neurosurgical uses.[1, 2] Methyl 2-cyanoacrylate (Eastman 910) was found to have excessive tissue toxicity.[3] The observation of Woodward et al[4] that the higher homologues of cyanoacrylates were less toxic has been confirmed.[1, 5] Further studies on the brain in our laboratory have suggested that the tissue toxicity plateaus once the homologue chain reaches butyl or isobutyl. These higher monomers, however, are much less biodegradable and persist at the site of implantation for many years. A real bonus with the use of cyanoacrylates is their bacteriostatic action.[2] Isobutyl 2-cyanoacrylate seems to possess a high degree of bacteriotoxicity in relation to its low degree of histotoxicity. With accumulated experimental evidence, the FDA licensed Ethicon, Inc., to make the isobutyl 2-cyanoacrylate monomer available for clinical research.

In the laboratory IBC was compared with a different family of tissue adhesives, gelatin resorcinol formaldehyde, as to their ability as tissue adhesives. Gelatin resorcinol formaldehyde was developed at the National Institutes of Health and underwent experimental studies in our laboratory. This latter compound was found to be ineffective in producing a lasting seal of the dura against high cerebrospinal fluid pressures or on arteries against pulsatile flow. In contrast, IBC consistently produces a lasting watertight closure within a few minutes.

Clinical Studies

Repair of cerebrospinal fluid fistulas. If

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‖ Produced as Coapt by Ethicon, Inc., Somerville, N. J.

military neurosurgeons were to select one area in which a tissue adhesive is needed, this would undoubtedly be the situation. A watertight closure of the dura remains an essential technique in neurologic surgery. Situations in which suture closure is difficult or impossible are all too frequently encountered. Lack of space, lack of defined borders or substance to sew to, and inability to visualize a known site of cerebrospinal fluid leak are the most common situations.

Although the use of IBC is by no means routine in the repair of CFS fistulae, we have accumulated 22 cases over a 5-year period. Four of these cases have already been reported.[6] These 22 cases represent only the difficult cases in which routine neurosurgical technique had been tried and failed or in which the surgeon thought there was no other way to repair the dura defect. A majority of the patients had had 1 or more prior operative attempts at repairing the fistula. Most of these patients had had well documented episodes of purulent meningitis, and 1 patient had had 12 bouts of meningitis and 5 prior craniotomies before his definitive repair was done using the tissue adhesive.

Illustrative of the typical case in which the "glue" was used is the following example:

On November 20, 1966 a 24-year-old First Lieutenant sustained a perforating missile wound of the head as a result of hostile action near TayNinh in the Republic of Vietnam. The missile entered just behind the external angular process of the right frontal bone and exited in the mid-forehead region. At the third Field Hospital he was semicomatose Skull X-ray films revealed extensive fracture of the right frontal bone with multiple bone fragments present in both frontal lobes.

First operation: On the day of his injury a bifrontal craniotomy was performed with débridement of the head wound and closure of the dura with a pericranial graft. Postoperatively the wound drained serosanguineous fluid and skull X-ray films revealed retained bone fragments. The patient gradually became more responsive.

Second operation: On November 30, 1966 the wound was reopened and an extensive débridement of devitalized brain was performed and retained bone fragments removed. Multiple fractures of the floor of the anterior fossa were noted, and once again a pericranial graft was used to obtain a dura closure. The patient did well postoperatively except for intermittent fever. Then on December 18, 1966 he began to leak a clear fluid from his left nostril. Multiple lumbar punctures disclosed an increased white blood cell count.

Third operation: On January 5, 1967 a reëxploration disclosed a defect in the dura over the floor of the anterior fossa, and this was repaired by closing the defect with sutures. The patient did well until January 25, 1967 when once again C.S.F. rhinorrhea recurred.

Fourth operation: On February 17, 1967 a bifrontal exploration was once again carried out. A dural defect was discovered in the region of the left cribriform plate measuring 1 cm. in diameter. This area was covered with a pericranial graft which was bonded in place using isobutyl 2-cyanoacrylate. Postoperatively the patient has had no recurrence of rhinorrhea or meningitis. His intellect remains obviously impaired, but he is otherwise neurologically intact.

This case demonstrates many of the reasons why neurosurgeons need a technique that can give a watertight dural closure. Table 1 summarizes our experience in using the tissue adhesive in this situation.

TABLE 1: Surgery for CSF Fistulae

Clinical Manifestation	No Further Leak or Infection	Operative Failure	Death
Rhinorrhea	13	1	2
Otorrhea	1		
Paradoxical rhinorrhea	1		
Pneumocephalus without rhinorrhea or otorrhea	2		
Recurrent meningitis without observable rhinorrhea or otorrhea	2		
TOTALS	19	1	2

Tumors of the nose and paranasal sinuses. These neoplasms are presently being treated at Walter Reed General Hospital by a combined neurosurgical and otorhinolaryngological operation to achieve total tumor removal.[7] In brief, the operation consists of a bifrontal craniotomy with osteotomy of the portion of the frontal fossa overlying the tumor. The bone and tumor are then pushed downward into the nose and involved sinuses and the defect in the frontal fossa and craniotomy closed. The tumor is then removed by transmaxillary approach.

The hole in the floor of the frontal fossa (cribriform plate) has been closed in 3 cases by placing a large piece of Teflon* between dura and bone and bonding it to the fossa floor with isobutyl 2-cyanoacrylate. Two patients developed epidural abscesses postoperatively necessitating removal of the craniotomy bone flap. In 2 patients including one that had an epidural abscess the Teflon graft loosened and fell out. There were no cases of meningitis or cerebrospinal fluid fistulae and no postoperative mortality. The use of a Teflon graft and tissue adhesive has been discontinued in this type of surgery. The adhesive alone was not implicated as contributing to infection since there was a high rate of infection when it was not used.

Closure of other dural defects. Dural defects over the surfaces of the cerebral cortex are usually accessible for primary suture closure. We have used IBC to bond grafts in a limited number of primary and secondary dura closures. Difficult angles for suturing and the need fo expeditious closure in long cases or poor-risk patients are the usual criteria for this selection.

Tumors other than those already mentioned are sometimes associated with loss of dura because of tumor invasion. For example, we have used the tissue adhesive to insert a fascial graft after removing a huge glomus jugulare tumor involving the petrous pyramid.

Closure of a ventricle. One patient who had sustained a bifrontal gunshot wound with destruction of both prefrontal regions of the brain developed a large right frontal porencephalic cyst which drained into his nose via a defect in the cribriform plate. After repairing the skull and dural defects a pericranial graft was used to seal his ventricular defect. The IBC was applied around the margins of the graft which was then bonded to the ependymal surface. A watertight closure of the ventricle resulted.

Possible uses in vascular surgery. Encasement of intracranial berry aneurysms is often the preferred method of treatment if the aneurysm cannot be isolated from the circulation without risk of ischemia. Many new compounds are constantly being investigated for this purpose. Our laboratory experiments have shown that cyanoacrylates, including IBC, in large amounts will incite a foreign body reaction which can lead to various degrees of necrosis of the arterial wall. On the other hand, we have found methyl methacrylate* to be a very successful substance for aneurysm encasement.[8] There has been no evidence of tissue necrosis or a toxicity in long-term follow-up.[9]

The operating microscope has opened new vistas of neurosurgery, and one of these areas is microvascular surgery of the intracranial vessels. We have had no experience in human patients with the application of tissue adhesives to close arteriotomies of intracranial vessels. Until experimental evidence shows that tissue adhesives produce less damage than the microsuture technique their routine use does not seem justifiable. All of the presently available homologues have been found to be at least to some degree thrombogenic as well as histotoxic.[1]

Acute trauma (hemorrhage). In the débridement of compound wounds of the brain the neurosurgeon is often plagued with the time-consuming task of stopping all bleeding. Our laboratory experience suggests, however, that tissue adhesives are less effective than the standard neurosurgical coagulation methods. There is also the disadvantage of placing a foreign material into an open and potentially contaminated wound. Therefore, we have not used adhesives in the management of acute brain injuries.

Discussion

Isobutyl 2-cyanoacrylate possesses many desirable properties as a tissue adhesive. Table 2 summarizes the characteristics of IBC as compared to the ideal compound described in our introduction. This monomer has been implanted in more than 30 patients with follow-up as long as 4 years with no adverse effects. We would hasten to add, however, that very minute quantities of the adhesive are being used. Rarely is more than 1 c.c. of IBC necessary in a dural defect of any size. Because even this compound is mildly neurotoxic, it must be stressed that the glue is kept from contact with cerebral tissue at all times during implantation of a dural graft. The graft is carefully adhesed to the surrounding dura while the brain is carefully shielded with cottonoid strips.

TABLE 2: Comparison of Properties of an Ideal Tissue Adhesive and Isobutyl 2-cyanoacrylate

Ideal Tissue Adhesive	Isobutyl 2-cyanoacrylate
No toxicity to neural and vascular tissue	No side-effects in human subjects included in present study
Strong and rapid bonding	Strong and rapid bonding
Adherence to bone, dura, fascia, muscle and synthetic substitutes	Excellent adherence to dura, fascia, muscle and Gelfoam. Fair adherence to bone and poor bonding with synthetic substitutes.
Ability to bond in the presence of blood and cerebrospinal fluid	Bonding ability diminished in presence of blood and cerebrospinal fluid
Bacteriotoxicity	High degree of bacteriotoxicity in experimental animals
Simplicity of application	Easy handling, application and spreading

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* Produced as Aneuroplasty by the I. D. Caulk Co., Milford, Del.

IBC must be applied in a relatively dry field. Bonding occurs poorly or not at all in the presence of blood or cerebrospinal fluid. This monomer adheres well to dura, muscle, absorbable gelatin sponge,* and suture material. To a lesser extent it also adheres to bone. It bonds with synthetic dural substitutes very poorly.

IBC is extremely simple to apply. It is prepared as both a liquid and aerosol spray. Because of our concern regarding histotoxicity only the liquid form has been used clinically. This form is supplied in a small squeeze tube which is presterilized and needs no mixing. After puncturing the seal the material is squeezed out like toothpaste. Since the consistency is similar to water, spreading is rapid and easy. A thin layer of IBC dries within seconds of application.

The outstanding neurosurgical application of the use of tissue adhesives is in the treatment of cerebrospinal fluid fistulas. A watertight closure of the dura remains an essential of neurosurgical technique. Situations in which suture closure of the dura is difficult or impossible are occasionally encountered. In our experience as well as that of most neurosurgeons recurrence prior to the use of adhesives was an all too frequent event.[10, 11] Although our series is not large, it is remarkable that there has been only 1 instance of recurrence of cerebrospinal fluid leak after the use of the tissue adhesive. Both of the deaths in our 22 cases resulted from sepsis in patients who were operated on under emergency conditions. These encouraging results have led us to conclude that if IBC is a harmless material when applied in the subdural space, and we believe it is, it has a definite place in neurosurgical armamentarium.

There remain several areas in which tissue adhesives are presently not needed or indicated. They are not effective in control of active intracranial hemorrhage. Application directly to neural surfaces has been avoided because of known toxic properties. Cerebrospinal fluid fistulae of the frontal sinuses are readily accessible, and tissue adhesives have not been necessary. The experience with loosening of Teflon grafts in surgery of nasal tumors indicates that IBC does not bond as well with synthetic dural substitutes as it does with tissue. The harmlessness of this tissue adhesive in aneurysm and microvascular surgery has not been conclusively established, but higher homologues are presently undergoing laboratory investigation.

It must be reëmphasized that clinical application of any tissue adhesive, including IBC, should not be routine. The well-proven surgical lessons and techniques are never precluded. However, in the confrontation with a difficult, if not impossible situation, a tissue glue may offer the surgeon a valuable assist.

Summary

Isobutyl 2-cyanoacrylate (IBC) is presently the most suitable compound available as a tissue adhesive. We have found that a biological glue has many potential uses in neurological surgery, i.e., repair of dural defects, vascular surgery, and in cerebral hemostasis. In reviewing our use of IBC in the period 1965–1970 we have concluded that the outstanding role of a tissue adhesive is in the repair of cerebrospinal fluid fistulas. Of 22 patients operated on for this condition, 21 had no further leakage. The 1 failure was due to post-operative drainage from a site not disclosed at the time the IBC was used. When IBC is used in the subdural space in the treatment of cerebrospinal fluid fistulas it is both safe and effective.

The authors wish to thank Ethicon, Inc., Somerville, New Jersey, for generously supplying the isobutyl 2-cyanoacrylate.

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* Produced as Gelfoam by The Upjohn Co., Kalamazoo, Mich.

A Critical Appraisal of the General Pathology of Non-neoplastic Bowel Disease

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OUR FIRST CONSIDERATION as physicians is to stop the disease process and to restore health. Every living process in the patient, including his disease, is mediated through the interaction of structure, function, and metabolism of his body. Our therapeutic regimen is designed to influence the interaction. These events occur against a background of capabilities and potentialities of response of the affected organ. They are predetermined by the biologic organization of the individual patient. In the field of gastroenterology, results of basic research have accumulated so rapidly that some may have escaped the attention of the practitioner. I shall attempt to give a synopsis of the findings which have a bearing on intestinal disease. My aim is to evolve a unifying concept of the general pathology of the intestinal tract as a basis for diagnosis and therapy. If in this special issue of the ANNALS I may be permitted a military metaphor, I should like to compare the general pathology of the intestinal tract to a field of operations to which the physician commits his therapeutic resources. In this discussion of biologic principles and basic research in gastroenterology I am concerned with something eminently practical—the dynamic processes which we hope to influence.

The primary functions of our digestive tract are food intake, the preparation of food for absorption, the actual absorption into the body proper, and the handling of waste products. The mechanisms by which these are accomplished are manifold and operate at different levels of organization of the body. Mechanical processes are involved, such as chewing, swallowing, several types of propulsion of the food bolus, as well as the retention of intestinal contents at the appropriate sites by sphincters, such as the pylorus, the ileocecal valve, and the anal sphincters. Complex enzymatic, chemical and biophysical phenomena occur in the process of digestion, secretion into and absorption from the digestive tract. It is the miracle of life that such an intricate system works at all and has even a built-in system of adaptation to stress and injuries, of renewal and of repair. The mechanisms underlying intestinal functions have had a long time to be tested. However, the basic principles of the digestive process can be discerned already far back on the evolutionary scale in free-living, unicellular organisms. Certain protozoa possess a special orifice for food intake leading into a digestive cavity; they have a system of enzymatic digestion, absorption and secretion, and sometimes even an elaborate system of waste disposal. What has been added in the course of evolution has been a further diversification and differentiation of digestive functions and further specialization of cells of the intestinal tract. This development is reflected in the anatomic morphologic organization of the bowel. The intestines have a muscular coat to assure motility and tonus, without which the bowel could not properly function and which in extreme cases could lead to death. The intricate interplay of constricting and relaxing of the longitudinal and circular muscle bundles is responsible for the proper mixing and propulsion of the intestinal contents, and may be seriously disturbed in disease.

A second major component of the bowel is the intestinal mucosa. In the small intestines the mucosa consists of villous and nonvillous portions. The crypts constitute a major element of the nonvillous portion. They represent the generative compartment of the constantly renewing intestinal epithelial lining. The crypts have additional functions, some of which we are just beginning to become aware of. Crypt epithelium may have an important role in the secretion of water and electrolytes into the bowel lumen. The serotonin-containing enterochrome cells of the crypts have as yet a not fully defined endocrine function. Villi are projections of the mucosal surface into the intestinal lumen. They are not rigid structures but, on the contrary, contain some muscle bundles by which they contract and expand. They can sway sideways in the intestinal juices as far as their attachment allows. This greatly enhances the opportunity of the villus cells to absorb food as it increases contact. At the same time the motion of the villi enhances lymph flow and also serves a protective function. The villi to a limited extent can avoid impinging objects. For instance, a patient could swallow a pin and suffer no serious consequences because of the evasive action of the muscle bundles. More importantly, the up and down pumping action of the villi propels the mucus which covers the villi toward the villus tips where it drops off into the intestinal lumen. This can be considered a self-cleansing action of the villi as the mucus entraps particles including bacteria. Enteric infections generally inhibit the pumping action of the villi and seriously affect mucus production.

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The epithelial lining consists of a single layer of closely adhering cells. This covers the other element of the mucosa which is called the lamina propria. Lamina propria and epithelial lining form an inseparable biologic unit. One cannot harm one without affecting the other. Neither can live by itself. The epithelial lining is the outer part of the intestinal barrier which assures homeostasis and the preservation of the milieu interieur of the body. The lamina propria is the other component of the intestinal barrier. The concept of a barrier function of the intestines goes back to the days of Metchnikoff, but only recently have we been able to substantiate this originally philosophical concept with biologic facts.

The barrier function of the intestines is in some way affected and modified in every type of enteric infection. In protozoa this intestinal barrier function rests in a specialized part of the plasmalemma of the unicellular organism. In vertebrates, including man, many different cells contribute to the barrier function. The most conspicuous among these are the cells of the intestinal epithelial lining. The bulk of these cells are so-called chief or absorptive cells. However, the potential of these cells extends beyond the absorptive function. These cells are an integral part of the mechanism of secretion of fluid and electrolytes into the intestinal lumen. This movement of fluid and electrolytes in and out of the intestinal lumen amounts to about 10 liters per day. Enteric infections greatly affect these fluxes. In addition, intestinal epithelial cells have an innate capacity for movement. They are compelled, as it were, to cover surfaces, to spread themselves, to distort themselves, to migrate, and to cover any defect or ulcer in the epithelial lining of the intestines. This capacity is crucial for the renewal of the epithelial lining and for the outcome of an enteric infection or a vascular accident involving the mucosa. In addition to all the functions mentioned the intestinal epithelium has still preserved one of the primordial functions of a cell which it shares with its unicellular ancestors: It engulfs, transports, modifies and digests particulate matter, including bacteria.

A great deal is known about the mechanisms by which solutes and lipids are transported from the intestinal lumen into the mucosa. Less well understood are the processes which permit absorption of colostrum in the nursing child and the lack of uptake of similar high molecular weight components in the postweaning period of life. This effect of maturation of the individual cannot be related to a generalized alteration of membrane structures because some individuals are liable to absorb high molecular-weight intestinal allergens, and practically everyone, if exposed, would absorb intact botulin toxin, which has one of the highest aggregated molecular weights known in biology—over 1 million.

Only the vaguest notions existed of how an enteric pathogen would overcome the intestinal barrier until we studied the mechanism of bacterial penetration from the intestinal lumen into the mucosa in guinea pigs experimentally infected with *Salmonella typhimurium*. This microörganism is a natural enteric pathogen for guinea pigs and man. It has no discernible effect on the structure of the intestinal epithelial lining as long as it resides in the intestinal lumen. However, when through movement of the bowel it is brought within a critical distance of a few hundred Angströms of the luminal surface of the intestinal epithelial lining remarkable changes are noted electronmicroscopically. Focally, in the area of critically close proximity, but not necessarily in direct contact, the microvilli of the brush border undergo a swelling and distortion, in the center of which is a localized disruption of the continuity of the cell surface membrane. A cavity is formed in the apical portion of the affected epithelial cell. The lesion is strictly localized and confined to the proximity of the pathogen. The remainder of the cell beyond the immediate vicinity of the impending invasion and penetration by the microörganism is structurally unchanged.

The phenomenon reminds one of a surrealistic picture. The virulent pathogen emanates a mysterious vital force which causes the complex organized cell surface to explode, creating a hole in the cell surface. We do not know the nature of this hypothetical force. It is absent in avirulent organisms which do not affect the cell surface. Conceivably, avirulent organisms are highly negatively charged and are repelled from the negatively charged intestinal epithelial cell surface. Virulent organisms could have a more positive charge which would make them electrostatically attractive to the cell surface. Whatever the mechanism of virulence eventually may prove to be, the pathogen enters the cavity irrespective of its own motility. Its presence within the epithelial cell cytoplasm elicits a series of ultrastructural cell membrane formations and reformations which transport the microörganism through the depth of the cell in a matter of a few hours. The cell at the same time retains the capacity to localize cytoplasmic injury and even reconstitutes its luminal surface including microvilli. The mechanism by which the pathogen leaves the epithelial cell and enters the lamina propria is unknown.

The reason why I stress this sequence of events is to emphasize that the process of bacterial penetration is a cellular process. The bacterium does not invade but is absorbed by a process of modified pinocytosis. This process is very similar to phagocytosis. Prior to our studies it was believed that phagocytosis was restricted to leukocytes. Now we know that similar mechanisms also exist in intestinal epithelial cells. Of course, this capacity for handling particulate matter and for localizing and repairing injury of individual cells is only one aspect of the chief function of the cell, that of absorption of nutrients.

Enteric infections can affect the absorptive capacity of the epithelial cells in different ways. It may affect the turnover of cells of the mucosa, bringing functionally immature cells to the surface. In addition, severe or prolonged enteric infections damage the brush border. This in turn interferes with the normal responses and adaptation of the brush border enzymes to diet, vitamins, hormones, and drugs—in short, to all substances or matter coming in contact with the intestinal mucosa. Brush border damage can persist long after the agent which precipitated the damage has been eliminated. For this reason malabsorption can plague a patient long after he has suffered an acute episode of enteric infection.

We are conditioned from the illustrations in our textbooks to visualize the luminal surface of the intestinal epithelial lining as a thin linear membrane. This concept is based on misinformation. High resolution electron photomicrographs have revealed filaments which extend from the apical region of the cell through the limiting cell membrane into the glycocalyx, the so-called fuzzy coat which covers the brush border. The glycocalyx is produced by the intestinal epithelial cell. Although extracellular, the glycocalyx should be regarded as a functional and structural component of the epithelial cell. This cell is usually credited only with the capacity for absorption and transport. The fact that certain specific intestinal secretions, such as hydrochloric acid and digestive enzymes, are excreted by specifically specialized cells has contributed to the unawareness of the highly complex secretory products of the intestinal epithelium which include a special form of immunoglobulin A, blood group substances, and the glycocalyx. This should be viewed as part of a general biologic phenomenon, that cells, particularly on stimulation, may secrete a variety of substances. These excretions should not be viewed solely as waste disposal but can be highly specific in composition and function.

The glycocalyx in turn is intimately covered and mixed with epithelial mucus which is produced by the goblet cells and possibly crypt cells. The implication of this arrangement is that the luminal surface of the intestinal epithelium is not a membrane but a biophysically active, enzyme-rich, dynamic system composed of water, several mucoid substances which chemically are glycoproteins and/or glycolipids, phospholipids, and cholesterol, the principal components of the cell membrane proper. It is in this surface border or border zone that the normal autochthonous bacterial flora resides. Enteric infections are bound to influence this arrangement.

I have so far emphasized the structural components of the villi as they relate to intestinal infections. It should be noted that the nonvillous portion, an integral part of the mucosa, shares with the villi the compensating mechanisms and reactions which an enteric infection elicits. The nonvillous portion of the mucosa also consists of a 1-layer epithelial covering and a lamina propria. Lamina propria is an historic term for a loose connective tissue which, in addition to the more fixed tissue elements, contains motile cells. The fixed elements which provide a structural frame and substance to the tissue consist of connective tissue and elastic fibrils, muscle bundles, vessels and nerves. These are embedded in a ground substance in which the motile cells migrate. The motile cells are lymphocytes, macrophages, neutrophils, eosinophils, and mast cells. In addition, the lamina propria contains single and aggregated lymph follicles with germinal centers. This arrangement provides for an abundance of immunologically competent cells which on stimulation are capable of participating in cellular immune responses and of producing the various classes of immunoglobulins (Ig).

The humoral antibodies of the intestinal mucosa have an important component, the special secretory antibody system which accounts for the presence of modified IgA in the gut lumen. In the lamina propria of the intestines IgA-producing immunocytes are the first to differentiate, to be followed by IgG- and IgM-producing cells. This event occurs very early in life, even in the fetus, regardless of whether the antigenic stimulus reaches the organism via the blood stream or the amniotic fluid. This is in contrast to the spleen where IgG-producing cells appear first and are most numerous. This observation tends to support the concept of a dual derivation of an immunologically competent lymphoid-cell population. On the one side there is the nonthymus-dependent lymphoid tissue analogous to the bursa of Fabricius of chicken intestines from which the humoral antibody (Ig)-producing cells are derived. On the other side are the thymus-dependent cells of lymph follicles and germinal centers which mediate cellular immune responses. The IgA-producing cells and the special IgA secretory process in man may be related to the intestinal lymphoid organ of chickens, the bursa of Fabricius. In man the exact relationship between the thymus-dependent, cellular-immunity determining, and the nonthymus dependent, humoral-immunity determining populations of immunocytes have not been fully established. Regardless of the details, the importance of immune responses as they relate to the intestines is increasingly recognized. Without a mechanism for induced immunologic tolerance the multitude of antigenic substances which are absorbed from the alimentary canal would result in an intolerable state of hypersensitivity. Occasionally this system fails, as in patients with food allergies. More serious for the patient is an acquired or congenital lack of immune responses. Ogden Bruton, a prominent Army pediatrician, was the first to recognize immunologic deficiency disease as an entity. While stationed at the Walter Reed General Hospital he described agammaglobulinemia, which also affects the intestine.

The importance of altered immune responses in the evolution of disease processes goes far beyond the immunologic deficiency disease of childhood. We may assume that pathologic immune responses are implicated in the pathogenesis of chronic inflammatory bowel diseases, particularly ulcerative colitis. Immunologic deficiency states are also produced therapeutically with radiomimetic or immunosuppressive drugs resulting in well-known enteric complications.

The exact mechanism by which the multiplicity of antigens which continuously are being absorbed from the gut stimulate the secretory antibody system, and, in particular, the relative roles of secretory, cell-bound, and the circulating antibody systems in the barrier function of the intestinal mucosa, is unknown. We may assume that the immune status influences greatly the course of an enteric infection. Different levels of immunity in the population at risk undoubtedly contribute to the spectrum of severity of clinical signs and symptoms observed during an epidemic of enteric infections. However, the immune status of the host does not seem to affect the type or quality of the tissue response to bacterial agents. In typhoid fever, in which this question has been studied most, prior immunization of both mice and man affords only partial protection against subsequent infection with typhoid organisms by the natural, oral route. Although a 100-fold larger inoculum is required to induce the disease in immunized groups, once the infection becomes established the clinical course and the histologic character, progression and spread of the typhoid lesions are identical in immunized and nonimmunized individuals.

The bowel has its own highly complex system of intrinsic nerves, the so-called autonomic nervous system. Recent research has indicated that the name "autonomic nervous system" is a misnomer. Higher brain centers are linked to the peripheral autonomic nervous system of the bowel. This connection is an important factor in the development of the so-called stress ulcer and of psychosomatic diseases of the bowel, certain forms of colitis, nervous diarrhea, and indigestion. The autonomic nervous system is characterized by a dual nerve supply consisting of sympathetic and parasympathetic fibers. Separate stimulation of either of the 2 nerve tracts would give rise to distinct but opposite responses of the effector organ. The significance of the autonomic nervous system is that it integrates the opposing systems and brings them into balance. Moreover, the presence of 2 opposing systems of innervation permits a very delicate attuning of responses.

The bowel, like every other tissue and organ in our body, has its own blood supply. The blood, similar to the nervous system, has an integrating function in that it connects the bowel with other parts of the body. The blood brings to the bowel nutrients, hormones, oxygen, plasma fluid, and cells. At the same time the blood is the vehicle by which most of the substances which have been absorbed are removed from the bowel. The rest is transported by the lymph. The blood supply of the bowel is distinguished by several features. The vascular bed is potentially so large that, if it is filled to its full capacity, it would accommodate the total circulating blood volume, leaving an insufficient supply for the vital centers of the brain and heart. This catastrophe happens occasionally in shock from peritonitis and in gram-negative infections. The body guards itself against the overfilling of the vascular bed of the bowel by a system of shunts and sphincters which restrict blood flow. A second unique feature of the blood supply to the bowel is that it is not uniformly distributed, as, for instance, in the muscles of the arm. In the bowel the serosal covering and the muscular coat receive relatively little, while the bulk of the flow goes to the mucosa and submucosa.

Corresponding to the major functions of the mucosa—absorption, secretion and cellular and humoral defense—the capillary network is most highly developed here. The capillaries have even a special anatomic structure, presumably in response to functional demands. They are of the so-called fenestrated type and are similar to those occurring in the renal glomerulus. However, the mucosal blood supply is not equally distributed because of a separate but interconnected blood supply to crypts and villi. The crypts, the metabolic highly active generative portion of the mucosa, receive a fairly constant supply, while the blood flow to the villi varies with demand. It is increased postprandially and in inflammatory bowel disease. Mucosal blood flow may be seriously impeded, not only by obstruction of major vessels which results in the spectrum of ischemic bowel disease but also by shunting and stasis as a result of vasoconstriction, as, for instance, in hypovolemic shock. An important feature of the intestinal circulation is the fact that the venous return from the bowel does not enter the systemic circulation directly but passes first through the liver. The liver has a key role in protecting the body against injurious substances emanating from the bowel.

The bowel as an organ is highly integrated within its own individual components and with the rest of the body. Disease disturbs this integration of morphology and function and involves in every instance multiple components of the intestines. For this reason the diagnosis of enteric conditions may be difficult, not only because the same etiologic agent may elicit a spectrum of responses but also because diverse causative factors may elicit identical effects on the organ. After the etiology has been established the therapeutic regimen designed to control the primary factor in the disease process may fail to correct manifestations of concomitantly deranged components of the bowel which may have a different rate of repair. This is illustrated by the varying response of patients with tropical sprue or gluten-induced enteropathy to appropriate therapy. A knowledge of the general pathology of the intestines helps to explain the spectrum of clinical manifestations and responses to therapy in our patients.

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Platelet Kinetics in Splenomegaly

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THE MEASUREMENT of platelet kinetics with ^{51}Cr labeled autologous or homologous platelets is a useful clinical and investigative technique. Studies by Harker and Finch[1] and Keene and Aster[2] demonstrate that thrombocytopenic individuals can be classified into disorders of production (hypoproliferative or ineffective), distribution (splenomegaly), destruction (immune or consumptive), and combinations of disorders. This article reports the results of platelet kinetics in 5 patients with splenomegaly caused by a lymphoproliferative malignancy.

Observations of abnormal platelet production and iso-immune destruction are described only as they relate to particular patients of this report. In addition to the demonstration of abnormal platelet kinetics in individuals with splenomegaly, the existence of hypersplenism of platelets in patients with a normal platelet count and without leukopenia or decreased red blood cell survival is reported.

Methodology

Laboratory studies for the clinical evaluation of patients were measured by routine methods. The reticulocyte index was calculated with corrections of the percentage of reticulocytes outlined by Hillman and Finch.[3] The diagnosis in each patient was determined by examination of tissue specimens. Platelets were enumerated by the phase contrast method. Platelet survival was determined by isotopic disappearance of ^{51}Cr-labeled platelets in 5 patients with splenomegaly and 4 normal subjects.

The platelet labeling technique was that described by Aas and Gardner[4] with the modification of Abrahamsen.[5] With standard plastic equipment, acid-citrate-dextrose (ACD) anticoagulant, and procedures in routine use in the blood component program of the Walter Reed Blood Bank the autologous platelets from 500 ml. of whole blood were harvested, labeled with Na^{51}CrO$_4$, and injected into the recipient. In one patient homologous platelets from the same donor were utilized in studies before and after splenectomy.

Two hours after transfusion and daily for 8 to 10 days a platelet concentrate was prepared from 12 ml. of whole blood withdrawn into a plastic tube containing 1 ml. of 3 per cent ethylenediamine tetracetate (EDTA). The platelet concentrate was counted in a Nuclear-Chicago autogamma counter; sufficient counts were obtained to give a counting error of less than 1 per cent. All procedures were performed at room temperature.

The 2-hour value was used as the 0 time (100 per cent value), and the platelet activity present on subsequent days was related to this measurement and plotted as per cent on arithmetic paper. Survival was reported as the time when platelet activity reached 10 per cent of the 2-hour measurement.

The per cent platelet recovery at 0 time was reported as the observed ^{51}Cr activity per ml. whole blood at 2 hours × 100 divided by the theoretical platelet ^{51}Cr activity ml. of whole blood. The latter is calculated from the ratio of total platelet radioactivity transfused into an estimated blood volume (7 per cent of body weight).

Platelet turnover per cu. mm. was calculated from the measured platelet count (cells per cu. mm.) divided by the survival time in days. According to a modification of the method of Keene and Aster[2] the platelet turnover was corrected for splenic pooling by multiplying the quotient by the ratio of mean per cent recovery observed in normal subjects divided by the per cent recovery in the patients.

^{51}Cr activity over the precordium, lung, liver and spleen was measured immediately after transfusion and daily with a directional scintillation detector. Organ measurements were corrected for isotope decay and divided by the microcuries of platelet ^{51}Cr transfused. The relative level of organ activity was plotted versus time, and the spleen to liver radioactivity was compared.

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Results

Table 1 shows the clinical and laboratory findings in 5 patients with splenomegaly and a lymphoproliferative malignancy. All patients were male and from 20 to 53 years of age. Four patients were anemic but had a normal total leukocyte count and normal serum bilirubin concentration. Three patients had an increased reticulocyte index. Two of the 5 patients had hyperplasia of 1 or more normal marrow elements, especially megakaryocytes.

TABLE 1: Patients with Splenomegaly

Patient Sex Age	Diagnosis	WBC (cells/cmm. × 10³)	Hematocrit (per cent)	Reticulocyte Index	Platelets (number/cmm. × 10³)	Serum Bilirubin Total/Direct (mg./100 ml.)	Bone Marrow	Spleen Size	Remarks
R. S. M 53	Lymphosarcoma	10	30	1.9	290	0.5/0.2	Erythrocytic and megakaryocytic hyperplasia	7 cm.	
C. C. M 20	Hodgkin's disease	8	45	2.5	300	0.5/0.2	Panhyperplasia	5 cm.	Serum LDH 450 units; red cell isoenzyme fraction increased
J. E. M 22	Lymphosarcoma	4.3	29	0.7	5	0.6/0.2	Leukosarcoma Normal elements present but reduced	8 cm.	Bone-marrow infiltration Previous chemotherapy and radiation therapy
		5.5*	37*	0.8*	45*	0.2/nd*			Poor incremental response to platelet infusions, suggesting iso-immune sensitization
J. W. M 51	Lymphosarcoma	5.2	39	2.0	100	1.0/0.3	Leukosarcoma Normal number of megakaryocytes	6 cm.	Red-cell lifespan T/2 ^{51}Cr 30 days
P. J. M 51	Chronic lymphatic leukemia	22	34	0.8	80	0.6/nd	Lymphatic infiltration 85 per cent Megakaryocytes normal or increased	900 Gm.	Red-cell lifespan T/2 ^{51}Cr 22.5 days Splenectomy produced no change in peripheral counts

* Postsplenectomy determinations,
nd = not determined

Table 2 compares the results of platelet studies in 4 normal volunteers with the 5 patients described in this report. Following transfusion of autologous ^{51}Cr-labeled platelets, 50 per cent of the radiolabeled platelets were found in the circulating blood 2 hours later. Subsequently there was a linear disappearance of these radiolabeled circulating platelets so that 10 per cent were found in the blood 8 days later. External probe detectors showed 1.2–1.5 times more radioactivity over the spleen than the liver. The calculated normal daily platelet turnover was 30,000 cells/cu. mm./day. One normal study is shown as figure 1.

In patients with malignant disorders significantly fewer radiolabeled platelets were found in the blood 2 hours after transfusion, and more radioactivity was detected over the spleen than in normal volunteers. In 4 patients the subsequent rate of disappearance of platelets was nearly normal (6.5–8.0 days) (see data for patient C. C., figure 2). The other patient (J. E.) had a rapid rate of disappearance of homologous-labeled platelets before and after splenectomy. However, many more labeled platelets were recovered in the blood

TABLE 2: Platelet Kinetic Data

Patient	Platelets (number/ cmm. × 10^3)	Platelet Lifespan (days)	Platelet Turnover (number/cmm./ day × 10^3)	Recovery at 0 time (per cent)	Spleen-Liver Ratio
Normal ± 1 S.D.	239 ± 61	8.3 ± 1.3	30.9 ± 5.6	50 ± 4.3	1.5:1
R. S.	290	6.7	52	40	3.5:1
C. C.	300	7.1	59.2	34	2:1
J. E.	5	2.0	nd	6	3.3:1
	45*	2.0*	nd*	55*	0.6:1*
J. W.	100	8.0	35	17	2.3:1
P. J	68	6.5	16.8	29	nd

* Postsplenectomy measurements
nd = not determined

following splenectomy than before (55 vs. 6 per cent), and this improved the thrombocytopenia. The calculated daily platelet turnover was almost twice normal in 2 patients with an uncompromised bone marrow (R. S., C. C.) but was not increased in patients with malignant infiltration of the bone marrow (J. W., P. J).

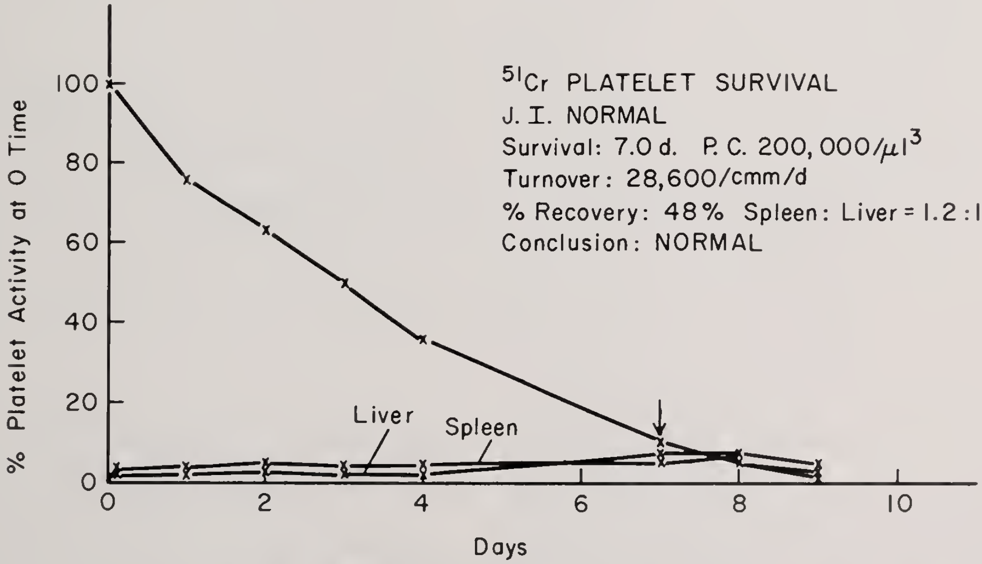

FIG. 1. Normal ^{51}Cr platelet survival.

Discussion

In this study and in reports by Harker and Finch[1] and Keene and Aster[2] normal subjects have a linear disappearance of ^{51}Cr-labeled platelets from the blood within 7 to 10 days. Fifty to 70 per cent of injected platelet ^{51}Cr activity is recoverable in blood 1 to 2 hours after transfusion when an equilibrium is achieved. Studies by Aster in asplenic humans demonstrate a recovery of 90 per cent; this indicates that normal splenic pooling accounts for a significant portion of the noncirculating ^{51}Cr-labeled platelets and 30 to 40 per cent of platelets may be pooled in the spleen.[1, 2, 6, 7]

In splenomegaly from any cause the spleen may sequester excessive numbers of platelets. Increased production can maintain normal circulating levels of platelets in patients with an uncompromised bone marrow. Two of our patients had a 2-fold increase in platelet production (R. S., C. C.), and a 2- to 3-fold increase in production is reported by others.[1, 8] A marrow compromised by infiltration with malignant cells, radiotherapy, or suppressive chemotherapy does not have normal capacity to respond, and thrombocytopenia occurs (J. W., P. J.).

In patients with splenomegaly the life-span of autologous platelets may be normal or only slightly reduced; the thrombocytopenia is not usually caused by decreased platelet life-span, a hallmark practically limited to immune or consumptive thrombocytopenia.[1, 2] However, some patients with splenomegaly also have an iso-immune abnormality which contributes to their thrombocytopenia. Decreased platelet life-span was demonstrated by the rapid disappearance of random donor platelets in one of our patients (J. E.). The shortened platelet survival was not influenced by splenectomy, whereas an increase in the per cent recovery and circulating platelet level were observed after splenectomy.

Similar to previous reports there was a decreased recovery of ^{51}Cr-labeled platelets in the blood of patients with splenomegaly 2 hours after infusion. Quantification of organ radioactivity with external probe detectors showed an increased splenic to liver ratio of radiochromium, indicating that there was an increased sequestration of platelets in the spleen. These findings were observed both in patients with thrombocytopenia and in those who maintained a normal platelet count by increased platelet production.

Penny et al[9] reported that an enlarged spleen sequesters large numbers of viable platelets. They perfused the spleen of patients undergoing splenectomy and showed that (1) the number of platelets sequestered by the spleen was related to splenic size and not to the peripheral platelet count, (2) the number of platelets sequestered by the spleen was far in excess of that observed in a similar volume of blood, and (3) platelets isolated from the spleen were functionally and morphologically normal. Penny et al concluded from perfusion studies that the spleen sequestered up to 7.5 times the number of circulating platelets. Their data and that of Aster[6] revealed that the platelet pool was increased in splenomegaly and remained in equilibrium with circulating platelets.

Patients with lymphomas, leukemia, or Hodgkin's disease often develop splenomegaly and thrombocytopenia. Studies which show splenic sequestration of transfused platelets and improvement with splenectomy indicate that this is the most frequently encountered cause of thrombocytopenia in these diseases. However, this is often worsened by suppressive chemotherapy or radiotherapy and the occurrence of neoplastic infiltration of the bone marrow or development of an auto-immune defect.

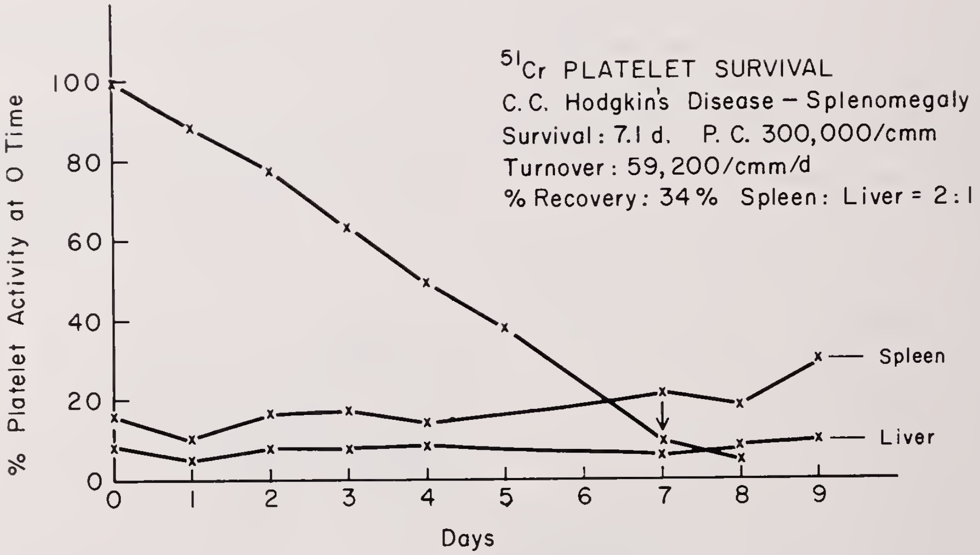

FIG. 2. Disappearance of platelets in patient C. C. (table I).

The identification of hypersplenism in patients with lymphoma or Hodgkin's disease has therapeutic value because splenectomy may permit more extensive use of either chemotherapy or radiotherapy.[7] Often hypersplenism can be detected by the coëxistence of leukopenia, thrombocytopenia, or a hemolytic anemia. In certain patients thrombocytopenia is the dominant problem with little or no involvement of the other formed elements of blood. In other patients with splenomegaly the platelet count may be normal, but "hypersplenism" or sequestration of platelets may still exist.

Summary

^{51}Cr platelet kinetic studies were performed in 4 normal volunteers and 5 patients with spleno-

(Continued on page 410)

What Is Asthma?

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ASTHMA is one of the diseases most frequently encountered by the practicing physician. Concepts as to its cause have varied from neurotic to infectious, but in recent years significant advances have been made in elucidating some basic processes operative in asthma.

A precise definition of asthma has eluded medical writers since antiquity, but despite this, every physician recognizes that certain patients are excessively prone to wheezing and that a variety of factors may cause wheezing in these patients. Although some episodes of wheezing can be caused by a specific allergen, e.g., cat dander, many wheezing episodes have little demonstrable relationship to an allergic process. Some have termed "allergic asthma" as "extrinsic" and asthma due to infection or unknown causes as "intrinsic." However, even in patients with allergic asthma many episodes are of unknown cause, and in certain "intrinsic" asthmatics, aspirin, which is "extrinsic," causes severe wheezing.

Regardless of proximate cause, there is bronchiolar constriction, goblet-cell hypertrophy, production of tenacious mucus, bronchial edema, eosinophilic infiltration of the bronchus, and sputum, often containing blood. Increased resistance to airflow causes increased effort of breathing, and uneven ventilation results in hypoxia.[1]

When asthmatic patients are viewed as a group, certain features of asthma are recognized as being so common as to demand an explanation in any concept as to the etiology of asthma:

1. Wheezing is produced or aggravated by a wide variety of seemingly unrelated factors such as smoke, emotional tension, and allergy.

2. Asthma is made worse by pulmonary infection.

3. Bronchial eosinophilia is nearly always present and is most prominent in those patients with "intrinsic" asthma, that is, those in whom allergy is least important.[2]

4. Asthmatics, regardless of whether allergic or not, are extremely sensitive to the bronchoconstrictive action of histamine and methacholine (Mecholyl®).[3, 4]

5. Epinephrine, isoproterenol (Isuprel®), theophylline (aminophylline), and corticosteroids are usually effective in relieving asthma. However, occasionally epinephrine fails and, rarely, may worsen asthma.[2]

6. Asthma, hay fever, and eczema are often present together in patients or their families and are clearly inheritable. These atopic diseases can be present individually or in various combinations. Members of "atopic" families often make a special type of antibody to ordinarily innocuous substances such as pollens. This antibody has been termed reaginic, homocytotrophic, skin-sensitizing, or immunoglobulin E (IgE), and is responsible for "positive skin tests."[5] However, many asthmatics do not have positive skin tests, which indicates that asthma can be inherited separately from reaginic antibody formation.

In attempting to explain these and other features of the asthmatic response, Szentivanyi[2] has proposed the "beta adrenergic receptor" theory of asthma. Certainly asthma can be looked upon as if it were due to, or at least associated with, an abnormality in the beta adrenergic receptors.

Since epinephrine is capable of both contracting and dilating certain smooth muscles under different circumstances, the concept of a dual adrenergic receptor system developed.[6] As the pharmacology of the sympathetic response evolved, drugs having selective stimulating or blocking effects on the receptors became available. Norepinephrine is an "alpha" stimulator and causes smooth-muscle contraction. Isoproterenol is a "beta" stimulator causing smooth-muscle relaxation. Phentolamine (Regitine®) is an alpha blocker and prevents smooth muscle contraction, and propanolol (Inderal®) is a "beta" blocker which prevents relaxation.[6, 7] Epinephrine stimulates both alpha and beta receptors, but if propanolol is blocking the relaxation effect, then epinephrine will cause contraction of the bronchus instead of the usual relaxing response.[2] Other agents having an adrenergic effect and some cholinergic drugs which cause contraction of the bronchus are outlined below.

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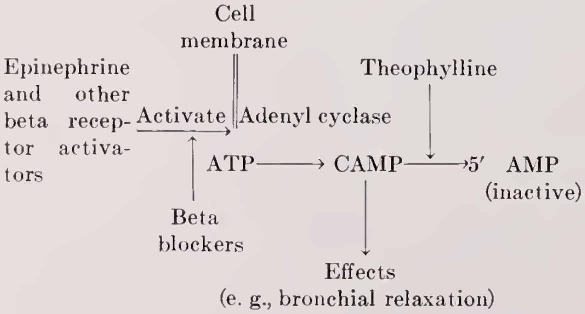
Bronchial Relaxation	**Bronchial Constriction**
Beta adrenergic activators	Histamine
Isoproterenol	Slow-reacting substance (SRS-A)
Epinephrine	
Theophylline	Irritants
Corticosteroids	Cholinergic Agents
Anticholinergic	Acetylcholine
Atropine	Methacholine (Mecholyl)
	Alpha adrenergic activators (weak)
Others (possibly)	
Prostaglandin E_1	Norepinephrine
	Epinephrine with beta blockade
	Others (possibly)
	Kinins
	Prostaglandin F_{2a}

It must be appreciated that the cholinergic and the 2 adrenergic systems are in a state of dynamic balance and that altering any one of them will cause a change in bronchial tone unless there is a normal compensatory response. As will be seen later, a deficient homeostatic function may be the basis of asthma.

Epinephrine has profound effects on many different tissue cells, muscle, liver, and lymphoid, and is an active stimulator of beta adrenergic receptor. Recent studies have indicated an enzyme, adenyl cyclase, to be the site of action of epinephrine in all these cells. At the heart of many cell functions is cyclic 3′5′ adenosine monophosphate (CAMP) which provides energy for the particular activity of that cell, be it contraction, secretion, or glycogenolysis.[8, 9]



Thus adenyl cyclase appears to be the beta receptor. Isoproterenol is the most potent available beta stimulator and the most effective bronchodilator.[6] Corticosteroids act by potentiating the effect of beta stimulation. Theophylline retards inactivation of CAMP, thereby increasing the amount available via a mechanism different from the beta stimulators. Consequently, epinephrine acts synergistically with theophylline in producing bronchodilatation.[8] Cholinergic mediators are counterbalanced by the normal beta receptor mechanism, but the asthmatic defect allows bronchoconstriction in emotional reactions such as laughing. Extreme sensitivity to the cholinergic methacholine is a "hallmark" of asthma.[3]

Allergic reactions in the human lung are known to release histamine, SRS-A, and possibly kinins.[10] Bronchospasm due to inhalation of pollens is blocked by antihistamines[11] Antihistamines are usually not effective in asthma, perhaps because most episodes are not primarily caused by allergy, or that other mediators are more important. Slow-reacting substance of anaphylaxis (SRS-A) is a potent bronchoconstrictor. It is not affected by antihistamines but is opposed by epinephrine and corticosteroids.[1]

Several vasoactive polypeptides called "kinins" are active in anaphylaxis in animals but have not been firmly implicated in human allergic lung reactions. They cause bronchial contraction and edema.[1] Since kinin activity is present in nasal secretions in allergic rhinitis a possible role for kinins in allergic asthma remains. The prostaglandins are a heterogeneous group of substances, some of which are active on the bronchus. PGE_1 is a bronchodilator in asthmatics but not in nonasthmatics.[12] PGF_{2a} is a bronchoconstrictor in asthmatics.[12] Any significant role in human asthma is merely interesting speculation now, but these factors are known to alter intracellular levels of CAMP.[8] Primary irritants such as smoke cause bronchial contraction in asthmatics due to inherent muscle irritability because of deficient homeostasis.

The fundamental abnormality in asthma is excessive irritability of the bronchial tree caused by immunologic, psychic, infectious, chemical, or physical stimuli.[2] Many characteristic findings in asthma can be produced in animals by either of 2 techniques: (1) pharmacologic blockade of the beta adrenergic system, or (2) immunization with certain bacteria (*H. pertussis* or Brucella).[13] Injection with living or killed *H. pertussis* organisms leads to a state of extreme sensitivity to the chemical mediators of anaphylaxis including histamine and bradykinin, and to methacholine. This sensitivity includes cold and irritants as well, and eosinophilia becomes prominent. In addition, such animals produce an abnormal antibody similar to human reagin (skin-sensitizing antibody).[2]

Animals continually given beta blockers likewise become highly sensitive to histamine, bradykinin, and stress as determined by extreme liability to anaphylactic death. They develop eosinophilia and make reaginic (skin-sensitizing) antibody. All of the abnormalities can be abolished by the addition of a beta-adrenergic stimulator to either group of these animals.[2]

There is much to explain an infectious influence in human asthma, since the pertussis infection in mice produced beta blockade, and asthma very often seems to begin or worsen with a respiratory infection. Asthmatics given measles[14] or influenza[15] vaccine have a greater degree of beta adrenergic blockade with increased sensitivity to methacholine and histamine. Thus it appears that infection increases the degree of beta adrenergic deficiency. Even normal persons given propanolol become more sensitive to the bronchospastic effects of methacholine and histamine and resemble asthmatics.[16]

Since epinephrine stimulates both alpha and beta receptors, when beta blockade is present epinephrine is ineffective or causes bronchoconstriction.[2] Epinephrine failure is termed "epinephrine fastness" or "epinephrine reversal" and is a feature of severe status asthmaticus. Patients in status would likely have the most severe abnormality of beta receptors. These patients may be helped by theophylline since it acts at a site beyond the receptor to increase the available CAMP. Corticosteroids improve the beta adrenergic function, which tends to restore the effectiveness of bronchodilators. The anti-inflammatory effect of corticosteroids is a separate but important result.[8]

Finally, it is suggested that what is inherited in the atopic family is beta adrenergic receptor deficiency.[2] This may be mild in any given system, i.e., upper respiratory, lung, skin, or lymphoid cells, so that hay fever without asthma may be present, at least until a sufficiently severe pulmonary injury occurs to expose the deficiency of homeostasis. Methacholine sensitivity of asthmatics is 1,000 times that of normals, but hay fever patients are intermediate.[17] Interrelationships between the several atopic diseases will be better understood when more studies such as described herein are applied to eczema and hay fever patients. Obviously, it is desirable to know how *H. pertussis* produces beta blockade.

An asthma-like syndrome with generalized wheezing has been occasionally caused by tracheobronchial obstruction or pulmonary emboli. These are presumably caused by an extreme cholinergic stimulation overcoming normal homeostatic protective functions. Wheezing due to pulmonary emboli has been relieved by atropine. These cases are clearly different from those discussed above.

Summary

It has been suggested that asthmatics as a group have many features in common and that these cannot be explained by allergy, irritants, or infection alone. The cardinal clinical, pharmacologic, and immunologic features of asthma can be reproduced by experimental methods causing a deficiency in the beta adrenergic receptor, adenyl cyclase. This defect may be the inheritable feature of atopy, and it is worsened by bronchial injury, especially infection. Asthma is clearly not fundamentally an allergic disease. If asthma is considered as resulting from, or as being associated with the described defect, then management, including avoidance of allergens, irritants, and emotional upsets, prevention and treatment of infection, and, for allergic asthma, adequate immunotherapy, becomes more rational.

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Fulminant Hepatic Necrosis Following Halothane Anesthesia

Report of a Case

LT. COLONEL RAFAEL A. RIVERA, MC, USA,* MAJOR HUGH A. McALLISTER, MC, USA,†
AND MAJOR MAX ROBINOWITZ, MC, USA†

RECENT EVIDENCE derived from controlled drug challenge[1, 2] has convinced observers that halothane hepatotoxicity is indeed an entity.[3] It has also reopened the need to assess the frequency of this occurrence, for which reason this case report is presented.

Report of Case

A 59-year-old, postmenopausal, white woman entered Walter Reed General Hospital for evaluation and treatment of invasive squamous-cell carcinoma of the cervix. Dilation, curettage, and cervical biopsy had been performed 2 weeks before with a combination of Pentothal®, cyclopropane, and oxygen as anesthetic. Following the procedure and to the time of admission she was asymptomatic. Her past medical history was unrevealing, and specifically she denied a history of liver disease, excessive consumption of alcohol, exposure to hepatotoxins, receiving blood, blood products, injections or drugs. She was obese, weighing 230 pounds, and had a blood pressure averaging from 120/90 to 140/110 mm. Hg. The liver was not palpable below the costal margin. Pelvic examination revealed an exophytic, fungating, cervical lesion extending into both parametria and uterosacral areas. Proctoscopy and cystoscopy showed normal findings.

Oncologic survey revealed the following: hematocrit, white blood cell count, platelet count, blood urea nitrogen, serum cholesterol, serum electrolytes, fasting and 2-hour postprandial blood sugar, serum uric acid, urinalysis, and 2 urine cultures were negative or normal. Liver function studies showed a total bilirubin of 0.2 mg. per cent with a direct fraction of 0.0 mg. per cent; SGOT 26 units; alkaline phosphatase 8.2 K-A units; prothrombin time 14.0 seconds (patient), 12.8 seconds (control); BSP 0 per cent retention at 45 minutes, repeated 1 per cent retention; total serum protein 7.4 Gm. per cent with a normal electrophoretic pattern. A radioisotopic liver scan was normal. Chest X-ray films, electrocardiogram, metastatic bone survey, and intravenous pyelogram were normal. A barium enema showed only some diverticula.

Radiation therapy was recommended. In order to perform an examination under anesthesia and attempt implantation of a radium needle the patient was given general anesthesia for 48 minutes 28 days after admission with nitrous oxide, oxygen, and halothane. Demerol®, Phenergan®, and atropine were used as premedication. Implantation was unsuccessful because of inability to visualize and sound the cervical os past the exophytic lesion. The lowest blood pressure recorded under anesthesia was 120/70 mm. Hg. The estimated blood loss was 150 c.c. External radiation to the pelvis was then initiated and continued over a period of 5 weeks when a second, now successful, attempt to place an internal radium implant was carried out. The same premedication drugs as before were used. This time she was given general anesthesia for 35 minutes with nitrous oxide, oxygen, and halothane. No hypotension or blood loss was noted. During the interval between the first and second exposure to anesthesia the patient felt well, remained afebrile, and required no medications of any sort.

On the day following this latter anesthesia her temperature rose to 102°F orally, with no cause apparent on physical examination, chest X-ray films, urinalysis, urine, or blood cultures. Twenty-four hours later the fever persisted and the radium implant was withdrawn early. A minimal amount of purulent material extruded from the implant site and the fever subsided rapidly during the day. On the evening of the third day following the second exposure to halothane she was seen to be jaundiced. The liver could not be palpated then or at any time thereafter through the thick abdominal wall. Skin rash and eosinophilia were never observed. SGOT and SGPT on the fourth day after the second halothane exposure were 2,610 and 1,320 units respectively; the alkaline phosphatase was 12.5 K-A units. Radioisotopic liver scan demonstrated diffuse poor uptake throughout both lobes consistent with hepatocellular disease. Serum bilirubin rose rapidly to a total of 31.8 mg. per cent, whereas the SGOT and SGPT dropped progressively to 195 and 332 units respectively. The alkaline phosphatase rose minimally to 16.1 K-A units. The prothrombin time rose to a level of 42 seconds (patient), 13.7 seconds (control).

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Coagulation workup revealed thrombocytopenia, hypofribinogenemia, and less than 10 per cent presence of factors II, V, VII, and XI. Factor VIII remained over 100 per cent. Pathologic fibrinolysis was shown by a rapid euglobulin lysis time despite addition of fibrinogen and thrombin. Serial thrombin times were also abnormal and reflected the presence of fibrinogen degradation products.

Confusion, disorientation, urinary incontinence, and asterixis featured the ensuing 7 days' course. The patient became unresponsive on the tenth day following the second halothane exposure. Hyponatremia, hyperkalemia, gastrointestinal bleeding, oozing from intravenous sites, oliguria, and hypotension further complicated the course. She died 2 days later.

Postmortem examination revealed the liver to be greatly reduced in size, weighing 865 Gm. Glisson's capsule was wrinkled. The cut hepatic surface consisted of soft, tan tissue in which no lobular architecture was discernible. Microscopic examination revealed partially massive and partially submassive hepatic necrosis which was most prominent in the centrolobular areas (figure 1). Mild steatosis was present in some of the midzonal and periportal hepatocytes, and there was piecemeal necrosis of these remaining hepatocytes with an associated infiltrate of acute and chronic inflammatory cells. The portal tracts also contained scattered acute and chronic inflammatory cells. There was pseudoductular transformation of hepatocytes on the lobular periphery, and significant attempts at regeneration were present. The lack of preceding liver disease was morphologically reflected in the sharp border of the portal tracts with the Masson stain.

Additional autopsy findings included moderately severe atherosclerosis of the aorta and its major branches and left ventricular hypertrophy, presumably secondary to the patient's hypertension. There was mild pulmonary edema. No residual carcinoma of the cervix was found in the pelvis or elsewhere.

Comment

We think that this case fulfills presently attainable criteria to attribute massive liver-cell necrosis to halothane. Liver function studies and hepatoscanning were normal less than 2 weeks before the first exposure and 6 weeks before the second exposure; intraoperative hypotension or blood loss was not observed; the operative procedures were simple, short, and did not involve entering the abdomen; blood, blood products or other drugs known to produce severe liver damage were not administered; the basic disease, carcinoma, did not involve the liver as evidenced by normal studies during life and autopsy findings; and, lastly, the histologic findings are compatible with toxic injury without morphologic evidence of preexisting liver disease. The coincidental, unrecognizable inoculation with infectious hepatitis virus after normal liver function studies were obtained is impossible to prove or exclude. The patient felt well before the second exposure, and therefore liver function studies were not repeated.

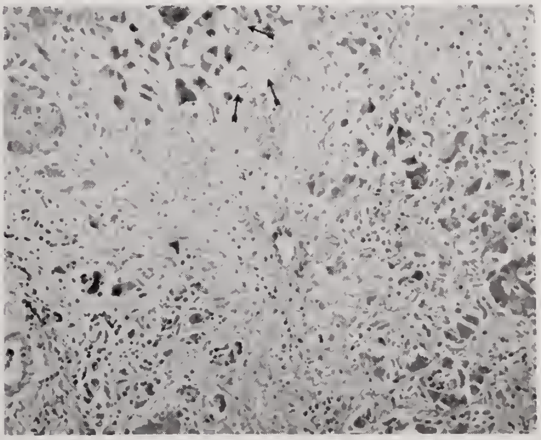

FIG. 1. Massive hepatocellular necrosis and inflammatory cell-infiltrate. Fat is present in some of the remaining hepatocytes (see arrows).

We are indebted to Dr. Hans Popper for review of the pathologic material.

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President's Page

POLITICS AND MEDICINE

Remember "Politics and Poker"? A lilting, comical, satirical ditty in the play, "Fiorello." The story, however, did present the impact of an individual on his community and on the people in it.

For many years the physician, concentrating on his own field, was very narrow in his views on community life. His teachings were of diseases and their effect on the individual. At first it was the whole individual, later parts of the individual, as specialization became more prevalent. Today's physician has become much broader in his thinking. He appreciates more the individual in his relation to his environment, community problems, and the national situation.

The concern of today's students in community problems (i.e., the medical student and health) and in the Nation's involvement in foreign affairs is very real. It is most enlightening to sit and discuss these subjects with the present generation of students and to find that they are not all radicals who want violence and revolution. I was most fortunate to discuss informally politics and campaigns with representatives of all 3 local medical schools. Not only medical but all students are beginning to think in terms of our democratic way of government and how they may become involved in politics to correct situations they believe need correction.

In this area I think the "older" physician is still lacking. It is not only a right but an obligation of all individuals to understand what the Government is doing and to express themselves through proper means. The medical profession is on the threshold of tremendous changes. When it comes to delivery of health care, every physician should become extremely knowledgeable concerning the many facets of this problem. Here he should be the expert. In this area he should know which of the country's representatives in Congress project the theories which if carried out would result in the best health care. He must become involved in politics—at least on this level.

The labor force learned long ago the importance of political action; today the student force is taking up the cudgel. The medical profession through AMPAC (locally DOCPAC) has attempted to educate the physician along these lines. It is imperative now that all physicians become involved.

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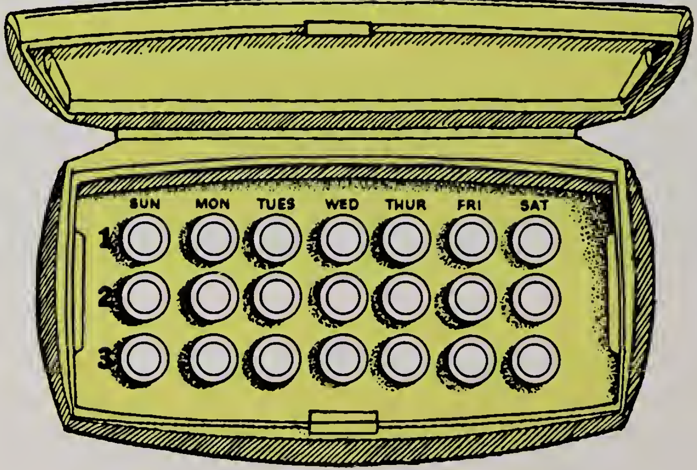

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Special note: Oral contraceptives have been marketed in the United States ince 1960. Reported pregnancy rates vary from product to product. The effeciveness of the sequential products appears to be somewhat lower than that of he combination products. Both types provide almost completely effective conraception.

An increased risk of thromboembolic disease associated with the use of hornonal contraceptives has now been shown in studies conducted in both Great Britain and the United States. Other risks, such as those of elevated blood presure, liver disease and reduced tolerance to carbohydrates, have not been quanitated with precision.

Long-term administration of both natural and synthetic estrogens in subprinate animal species in multiples of the human dose increases the frequency of ome animal carcinomas. These data cannot be transposed directly to man. The ossible carcinogenicity due to the estrogens can be neither affirmed nor refuted t this time. Close clinical surveillance of all women taking oral contraceptives nust be continued.

Indication—Demulen is indicated for oral contraception.

Contraindications—Patients with thrombophlebitis, thromboembolic disorders, erebral apoplexy or a past history of these conditions, markedly impaired liver unction, known or suspected carcinoma of the breast, known or suspected strogen-dependent neoplasia and undiagnosed abnormal genital bleeding.

Warnings—The physician should be alert to the earliest manifestations of hrombotic disorders (thrombophlebitis, cerebrovascular disorders, pulmonary mbolism and retinal thrombosis). Should any of these occur or be suspected he drug should be discontinued immediately.

Retrospective studies of morbidity and mortality in Great Britain and studies f morbidity in the United States have shown a statistically significant association between thrombophlebitis, pulmonary embolism, and cerebral thrombosis nd embolism and the use of oral contraceptives. There have been three princial studies in Britain[1-3] leading to this conclusion, and one[4] in this country. The stimate of the relative risk of thromboembolism in the study by Vessey and oll[3] was about sevenfold, while Sartwell and associates[4] in the United States ound a relative risk of 4.4, meaning that the users are several times as likely to ndergo thromboembolic disease without evident cause as nonusers. The merican study also indicated that the risk did not persist after discontinuation f administration, and that it was not enhanced by long-continued administraon. The American study was not designed to evaluate a difference between roducts. However, the study suggested that there might be an increased risk of romboembolic disease in users of sequential products. This risk cannot be antitated, and further studies to confirm this finding are desirable.

Discontinue medication pending examination if there is sudden partial or omplete loss of vision, or if there is a sudden onset of proptosis, diplopia or igraine. If examination reveals papilledema or retinal vascular lesions medicaon should be withdrawn.

Since the safety of Demulen in pregnancy has not been demonstrated, it is commended that for any patient who has missed two consecutive periods egnancy should be ruled out before continuing the contraceptive regimen. If e patient has not adhered to the prescribed schedule the possibility of pregncy should be considered at the time of the first missed period.

A small fraction of the hormonal agents in oral contraceptives has been idenied in the milk of mothers receiving these drugs. The long-range effect to the rsing infant cannot be determined at this time.

Precautions—The pretreatment and periodic physical examinations should inude special reference to the breasts and pelvic organs, including a Papanicopu smear, since estrogens have been known to produce tumors, some of them alignant, in five species of subprimate animals. Endocrine and possibly liver nction tests may be affected by treatment with Demulen. Therefore, if such ts are abnormal in a patient taking Demulen, it is recommended that they repeated after the drug has been withdrawn for two months. Under the inence of progestogen-estrogen preparations preexisting uterine fibromyomas y increase in size. Because these agents may cause some degree of fluid retention, conditions which might be influenced by this factor, such as epilepsy, migraine, asthma, cardiac or renal dysfunction, require careful observation. In breakthrough bleeding, and in all cases of irregular bleeding per vaginam, nonfunctional causes should be borne in mind. In undiagnosed bleeding per vaginam adequate diagnostic measures are indicated. Patients with a history of psychic depression should be carefully observed and the drug discontinued if the depression recurs to a serious degree. Any possible influence of prolonged Demulen therapy on pituitary, ovarian, adrenal, hepatic or uterine function awaits further study. A decrease in glucose tolerance has been observed in a significant percentage of patients on oral contraceptives. The mechanism of this decrease is obscure. For this reason, diabetic patients should be carefully observed while receiving Demulen therapy. The age of the patient constitutes no absolute limiting factor, although treatment with Demulen may mask the onset of the climacteric. The pathologist should be advised of Demulen therapy when relevant specimens are submitted. Susceptible women may experience an increase in blood pressure following administration of contraceptive steroids.

Adverse reactions observed in patients receiving oral contraceptives—A statistically significant association has been demonstrated between use of oral contraceptives and the following serious adverse reactions: thrombophlebitis, pulmonary embolism and cerebral thrombosis.

Although available evidence is suggestive of an association, such a relationship has been neither confirmed nor refuted for the following serious adverse reactions: neuro-ocular lesions, e.g., retinal thrombosis and optic neuritis.

The following adverse reactions are known to occur in patients receiving oral contraceptives: nausea, vomiting, gastrointestinal symptoms (such as abdominal cramps and bloating), breakthrough bleeding, spotting, change in menstrual flow, amenorrhea during and after treatment, edema, chloasma or melasma, breast changes (tenderness, enlargement and secretion), change in weight (increase or decrease), changes in cervical erosion and cervical secretions, suppression of lactation when given immediately post partum, cholestatic jaundice, migraine, rash (allergic), rise in blood pressure in susceptible individuals and mental depression.

Although the following adverse reactions have been reported in users of oral contraceptives, an association has been neither confirmed nor refuted: anovulation post treatment, premenstrual-like syndrome, changes in libido, changes in appetite, cystitis-like syndrome, headache, nervousness, dizziness, fatigue, backache, hirsutism, loss of scalp hair, erythema multiforme, erythema nodosum, hemorrhagic eruption and itching.

The following laboratory results may be altered by the use of oral contraceptives: hepatic function: increased sulfobromophthalein retention and other tests; coagulation tests: increase in prothrombin, Factors VII, VIII, IX and X; thyroid function: increase in PBI and butanol extractable protein bound iodine, and decrease in T^3 uptake values; metyrapone test and pregnanediol determination.

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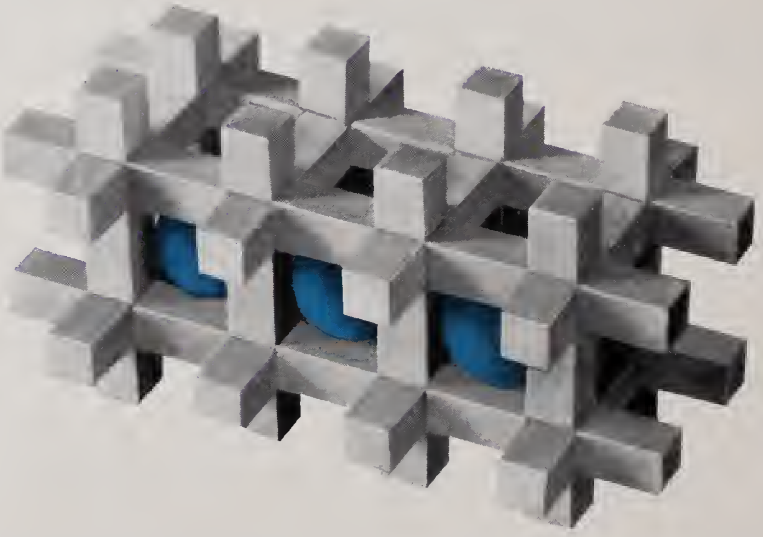

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History of the Medical Society
of the
District of Columbia

THEODORE WIPRUD

Executive Director and Secretary
The Medical Society of the District of Columbia
1938–1962

Published by
The Medical Society of the District of Columbia
Washington, D. C.
1970

Introduction

Theodore Wiprud was the logical choice to write this history. He served full time as Executive Director of the Society for twenty-four years and knows more about the recent events of the Society than any other man. I think you will find that for a history of the usual dull and unexciting professional society this one is written in a most interesting style. Mr. Wiprud was very popular with the members of the Society, many of whom sought his advice on professional matters and his counsel on personal affairs. He spent many hours writing this history without monetary remuneration.

This history not only covers in detail the years 1938–1962, when the author was Executive Director of the Society, but gives the main events of the history of the medical organizations in Washington from their beginning in 1817.

Two previous histories have been written, the first by Dr. D. S. Lamb covering the period 1817–1909, and the second by Dr. J. B. Nichols covering the period 1833–1944. Unfortunately, there are only a few copies of these two histories extant, except in libraries.

Mr. Wiprud's history will be published in monthly installments in the Medical Annals of the District of Columbia, the official publication of The Medical Society of the District of Columbia since 1932, and, hopefully, will be available later in a bound volume.

Mr. Wiprud is one of the very few laymen who have been elected to Honorary membership in the Society.

Wallace M. Yater, M.D.
Editor, Medical Annals
of the District of Columbia

History of the Medical Society
# of the
District of Columbia

CHAPTER I

In the Beginning and Later 1817–1900

AFTER THE BRITISH INVADED and gutted the American Capital in 1814 the City was a shambles. A Virginian passing through after the destruction said, "The appearance of our public buildings is enough to make one cut his throat." Not all citizens felt that way; some thought the War had been a blessing. Progressive decay of buildings in Washington, they said, had been undermining the City since 1802.

The only public building the British spared was that housing the Patent Office and the Post Office. Dr. William Thornton, Superintendant of Patents, later to become Vice President of the Medical Society of the District of Columbia (1820), pleaded with a British Major not to destroy the building because, he said, it contained patent models that were private and, further, their destruction would be a crime against civilization. There are varying accounts of Dr. Thornton's behavior on this occasion, some dramatic and others ludicrous, but the fact remains that due to his efforts the Patent Office was spared.

Dr. Thornton, architect of the U. S. Capitol, was a controversial figure in Washington. Although a graduate of medicine from the University of Edinburgh, Scotland, he never practiced in the United States. Considered one of the best educated men in the Country, he was a man of many talents: architect, painter, inventor, poet, and scientist. He took considerable pride in his close relationship with President George Washington and other high public figures. A Quaker, he was, nevertheless, a Captain of the Militia Cavalry in the Capital.

When the invasion of Washington by the British was imminent, Mayor James H. Blake, a physician who later became one of the organizers of the Medical Society of the District of Columbia, called upon citizens to form military units in each of the wards to defend the city "because the Militia has gone to meet the enemy."

Dr. Thornton, concerned lest the Patent Office be put to the torch, went to the Mayor's home, wishing the Mayor to accompany him. Upon learning that he was out of the city, Dr. Thornton, being Justice of Peace, considered it his duty to take over. Mayor Blake insisted that he was out of town on official business and looked upon Dr. Thornton's actions as reflecting on his courage. There were charges and countercharges. Dr. Blake was defended by his supporters as a physician "of repute and universal esteem." He protested vigorously what he considered the insinuations by Dr. Thornton. For his part, Dr. Thornton's statement of his conduct "while the enemy was in the city" appeared in the *National Intelligencer.*

Three years had passed when in March, 1817, James Monroe was inaugurated President of the United States. He was sworn in on the steps of the Brick Capitol, a temporary building used by the Congress while the original Capitol was being rebuilt. Monroe introduced a period known as the "Era of Good Feeling." Prosperity reigned and there was much optimism about the future, with no indication at the time that fiscal troubles were to engulf the country within a few years.

Although Washington in 1817 was a growing city, it did not give promise of ever becoming a metropolis. According to the 1820 census, there was a total population of 13,117 in the City of Washington, 9,376 of whom were white, 1,796 free Negroes, and 1,945 slaves. The District of Columbia then included the separate cities of Georgetown and Alexandria, and Washington County, which is now a part of the city. The total population of the Metropolitan Area was 33,039, of which approximately one-third were Negroes, both free and slave.

The first assemblage of Washington physicians had been in 1813. A memorial service was held for Dr. Benjamin Rush, one of the signers of the Declaration of Independence, who was also known as the "Founder of American Medicine." It was in 1817 that 16 practicing physicians from Washington and Georgetown gathered in Tennison's, a small tavern near 14th Street and Pennsylvania Avenue, to consider the organization of a medical society. An announcement of a meeting to be held on January 5, 1818, was published in the *National Intelligencer.*

At this meeting a Constitution and Bylaws was adopted and copied in a book which was signed by all the members. Dr. Charles Worthington was elected President, Drs. Arnold Elzey and J. H. Blake, Vice Presidents, Dr. Henry Huntt, Secretary, and Dr. William Jones, Treasurer. Thereafter, regular meetings were held.

Washington had rapidly become a haven for quacks and irregular practitioners. This was one of the primary reasons for the organization of the Medical Society. But relief did not come as expected. Accordingly, the Society, sometime in 1818, now having 20 members, applied to Congress for a Charter or an Act of Incorporation. The Charter was granted and approved by President Monroe, February 16, 1819. The names of the founders of the Society and pertinent information about them are shown in table 1.

Dr. Worthington, the senior member of the group, continued as President following incorporation. His tenure lasted 12 years. The youngest of the founders was Samuel Horsley, who was 21. The average age of those who gave their dates of birth was 40. Dr. William Jones, the last of the founders, died in 1867 in his seventy-seventh year.

Dr. Worthington was described by a contemporary as a "man venerable in appearance and a high Christian gentlemen though not a bigot. Exemplified by not objecting to the playing of cards by the students of his son, Nicholas, who was a professor of materia medica." Nicholas was pictured as a "manly character, of refinement, the pink of politeness, bashful and modest as a girl." He never married.

Dr. Charles Worthington was a graduate of the University of Pennsylvania. Born of well-known Colonial parents, favored by wealth and an excellent education, he and Dr. Frederick May were the two outstanding medical leaders in the Capital. To the end of his life he dressed in the old style, his hair in a queue, with knee breeches, long stockings, and buckle shoes.

TABLE 1: Founders of the Medical Society

	Year of Graduation in Medicine	Medical Institution	Place of Birth	Year of Birth	Year of Death	Age at Death
Blake, James H.	1789	Amer. Med. Soc. Phil.[1]	Md.	1768	1819	52
Clark, George	1810	Univ. Pa.	Va.	....	1822	..
Bohrer, Benjamin S.	1810	Univ. Pa.	Georgetown	1788	1862	75
French, Robert	1809	Univ. Pa.	....	1787	1835	48
Gustine, Joel Y.						
Harrison, John	....	....	Va.	....	1825	..
Harrison, Elisha	....	....	Md.	1762	1819	57
Henderson, Thomas	1809	Univ. Pa.	Va.	1789	1854	65
Horsley, Samuel	....	....	Va.	1798	1821	23
Huntt, Henry	1824	L.M.C.F.[2]	Md.	1782	1838	56
Johnson, James T.						
Jones, William	....	L.M.C.F.[2]	Md.	1790	1867	77
May, Frederick	1795	Harvard	Mass.	1773	1847	74
May, George W.	1813	Harvard	Mass.	1789	1845	55
McWilliams, Alexander	....	Univ. Pa.	Md.	1775	1850	76
Shaaf, John T.	....	....	Md.	1763	1819	56
Sim, Thomas	1823	Univ. Md.	Md.	1770	1832	63
Weightman, Richard	1817	Univ. Md.	D.C.	....	1841	..
Warfield, Peregrine	....	L.M.C.F.[2]	Md.	1779	1856	76
Worthington, Charles	1782	Univ. Pa.	Md.	1759	1836	76
Worthington, Nich. W.	1815	Univ. Pa.	Georgetown	1789	1849	60

[1] American Medical Society, Philadelphia.

[2] Licentiate of the Medical and Chirurgical Faculty, Maryland.

A significant provision of the Charter was that the Medical Society of the District of Columbia confine itself "to promoting and disseminating of medical and surgical knowledge and for no other purpose whatever." Further, that the Society "shall hold in the City of Washington, four stated meetings a year." That it shall "elect by ballot five persons, residents of the District who shall be stiled the Medical Board of Examiners of the District of Columbia, whose duty it shall be to grant licenses to such medical and chirurgical gentlemen as they may upon full examination, judge adequate to commence the practice of the medical and chirurgical arts, or may produce a diploma from a respectable college or society." The Medical Society was not permitted to regulate the quality of medical practice or fees. It had the distinction of being the first medical organization chartered by Congress.

The Charter contemplated a library with an elected librarian, but meetings were held in so many different places that books were lost. On September 26, 1866, when Dr. Joseph M. Toner made his Anniversary Address, there was only one book left. Six months later, when Dr. Toner was retiring as librarian, there were 152 books and pamphlets in the library, which was having hard going and which eventually was abandoned.

After the Society's incorporation Washington became a popular place for medical meetings. Delegates from the Society participated in the National Convention of Physicians held in Washington on January 1, 1820, at which time the U. S. Pharmacopoeia was adopted.

Interest in the Medical Society, at first enthusiastic, began to wane. There was much controversy among physicians about professional behavior, and anger led on occasion to dueling. As a result, activity in the Society began to languish, and the organization became moribund.

One reason for the disinterest in the Society at that time was the opening of the Medical Department of the Columbian College (later the George Washington University School of Medicine). In 1821, according to Dr. Toner, there was an "absence of fraternal feeling among young members" and the Department became "a new source of professional entertainment."

Another adverse condition was the dispute as to the need for the Medical Society as a licensing body, since all that was necessary was a diploma from a recognized medical college or medical society. Discontent continued unabated, and in 1826 a very determined effort was made to form a new medical society to supersede the chartered organization. Notice to this effect appeared in the *National Intelligencer.*

No meetings were held, nor were there elections in the years 1830 and 1832. As a result, when the Society "tried" a John Williams who was practicing medicine in the District of Columbia without a license, the defense advanced the argument that the Society had gone out of existence because for some years before 1834 it had failed to hold the meetings required by the Charter and therefore to elect a Medical Board of Examiners. The argument was sustained by the court.

By 1837 all but seven of the original incorporators were dead or had moved from the City. Those still in Washington were Drs. Frederick May, Alex McWilliams, Henry Huntt, William Jones, G. W. May, Peregrine Warfield, and N. W. Worthington. They and 14 others who had joined the Society petitioned Congress on its assembling in 1838 to revive the original Charter providing for authority to license practicing physicians but not to regulate practice or fees.

Physicians, it was proposed, must produce an acceptable diploma from a recognized medical school or a license to practice elsewhere. Penalty for noncompliance would be $50—one-half to the informer and one-half to the Society. Those admitted for examination would have to have studied physics and surgery for three years (in a physician's office) including one full course of lectures, usually taught in medical schools, or four years (in a physician's office) without such a course of lectures.

Restrictive as the Charter finally adopted by Congress was, the Society expressed its satisfaction. The new Charter was signed by President Van Buren on July 7, 1838. Since that time the Society has not failed to elect officers, except possibly during the Civil War (1862–1863).

Quacks were still doing a thriving business in Washington despite efforts to get rid of them. The Society held a meeting on May 9, 1860 to consider the case of a man named J. E. E. Ealin who called himself a doctor and claimed to be a celebrated aurist. The same man had practiced in Nashville, Tennessee as a "corn doctor." A committee of the Society was appointed to consult the District Attorney "with the view of taking such action as would be legal and desirable." There is no record of what happened to the "corn doctor."

In the years that followed the Medical Board of Examiners took other steps to rid Washington of pretenders. For example, on September 15, 1880, the Corresponding Secretary was directed to communicate with the editor of the *Philadelphia Press* (why this paper is unknown) to obtain the names of those in the District of Columbia who held bogus diplomas. The Secretary reported that he had been given the names of several such persons.

The Society voted to send a letter to all the irregular practitioners in the City and ask by what authority they were practicing medicine in the District. As a result several applied for a license.

Again, on May 21, 1884 the Board was asked to take measures to rid the City of traveling quacks. The Board replied it was not one of its duties. A committee of the Society was appointed to look into the matter. The District Attorney was consulted, and he suggested the summoning of the defending persons before the police court and that a grand jury be presented a bill of indictment. He said he would do everything possible in this effort. The District Attorney expressed doubt as to the validity of the law or his ability to collect fines under it.

The Health Officer permitted anyone to register as a physician who had a diploma from some college or a certificate of membership in a respectable medical society. He did not regard registration as conferring any legal right to practice medicine.

The Medical Society was not only concerned with pretenders in the practice of medicine but with the advertisements of charlatans in the Washington newspapers. The Society adopted a resolution on February 28, 1894, which read in part:

> "*The Washington Post*, of this city, enters a large number of our homes and is read by a large number of our sons and daughters; and as we have no desire to deprive our families of the benefits arising from the perusal of this newspaper; and whereas, this paper has, in our opinion, some of the most objectionable advertisements, such as the following: 'One male in every five is afflicted with varicocele; they are the great impediment to marriage; I am the only physician on earth that can cure a varicocele without operation or pain'; the above advertisement being in bold type and occupying a whole column, thus rendering it very conspicuous. Also the advertisements of 'sexual impotency,' 'seminal losses,' 'the

curing of syphilis in from 30 to 90 days,' 'pennyroyal pills,' 'results of self-abuse in youth,' 'nocturnal emissions,' 'sexual exhaustion,' and many other objectionable announcements of like character."

A committee was appointed to see what could be done. It recommended to the Medical Society that legislation be introduced in Congress prohibiting this type of advertising. However, it appears that nothing came of the recommendation.

In 1896 the Congress relieved the Medical Society of its licensure functions by establishing an independent licensing agency and regulations governing medical practice in the District of Columbia. The Society carried on many other activities, as it had from the beginning, which will be dealt with in more detail in subsequent chapters. Incidentally, the lack of a Medical Practice Act in the District had made Washington a rendezvous for impostors and charlatans. They were driven to the Capital from other states having licensing laws.

Women Physicians

Opposition to women physicians becoming members of the Society was quite vehement—"far more (than) to physicians of African descent." Dr. Mary Parsons was the first woman physician to be elected (1888). Dr. Mary D. Spackman who had applied in 1872 was informed that according to a provision of the Charter she was not eligible for membership. Women physicians made such a strong protest that Congress changed the word "gentlemen" in the Charter to "persons."

In 1901 Dr. Parsons was elected Vice President of the Society. She was highly elated and said that this was the happiest moment of her life.

National Surgical Institute of the District of Columbia

A bill was introduced in the Congress in 1876 providing for the establishment of the Institute. It was to be incorporated with a capital of $500,000. Shares would be sold for $100 each. Purposes of the Institute were "the treatment of surgical cases, the manufacture and sale of surgical instruments and appliances, the establishment of a college of surgery, the teaching of surgery in all its branches, and the establishment of a surgical hospital."

Members of the Medical Society were much disturbed because they had learned that the legislation had the support of some members of Congress. The bill was brought to the attention of medical societies throughout the country with a request that the legislation be opposed by them. The Society's protest was vigorous and detailed. A copy of it will be found in Dr. Lamb's History of the Medical Society, page 125.

The bill failed to pass, but this type of legislation was a portent of things to come.

Medical Association of the District of Columbia

In 1833 the Medical Association of Washington came into being. Later it became the Medical Association of the District of Columbia. Its purpose was to provide a code of ethics and a fee schedule, both of which were not permitted in the Medical Society Charter. Thus, there were two medical organizations, both having practically the same membership. However, the Association was an independent and voluntary organization devoting its attention to economics and ethical matters; the Society was a licensing and scientific body.

There was a great public outcry when it was learned that a fee schedule and certain regulations governing medical practice had been adopted by the Medical Association. The Association was charged with being a "closed corporation," "oppressor of the poor," and its members "extortionists." Public meetings were held; legal counsel was employed to break up the organization. Outside physicians were invited to settle in the District of Columbia with the assurance of public support and protection. Some alarmed physicians withdrew from the Association; several from outside the City settled in Washington.

Dr. Thomas Henderson, Secretary of the Medical Association, was asked to address a statement to the citizens of Washington. It was apparently a convincing one because it placated an aroused public and placed the Association on a "safe and firm basis."

Negro physicians were not admitted to membership in the Association or, for that matter, in the Medical Society, but more about that in another chapter.

Charges of violations of the Association's regulations involving unprofessional conduct of members were given consideration at several meetings. These frequently involved personal clashes and aroused bitter and angry passions. Prominent members were targets of accusations and had to defend themselves. Among them were those guilty of consulting with nonmembers, quackery, failure to promptly render bills for services, and in a few instances failure to charge at all. The extreme penalty was expulsion, but this occurred only twice—in 1871 and 1908. In spite of the acrimonious and personal clashes, the Association pursued its way with "firmness, justice, and equanimity."

The most sensational "trial" occurred in 1857 when some of the prominent members had to defend themselves against charges of endorsing a quack remedy. A member of the Medical Association sent a communication to the American Medical Association inviting it to hold its 1858 meeting in Washington without the consent or knowledge of the profession in the city. At the same time he forwarded a large placard, displayed by Gautier, a confectioner at the corner of 12th Street and Pennsylvania Avenue. The American Medical Association accepted the invitation and referred the communication and placard to the local Association for such consideration as it felt warranted. The placard bore an advertisement for "Herb drops," manufactured by Gautier, to which were added the names of important people who endorsed the drops. Among them were Drs. Thomas Miller, R. K. Stone, A. Y. P. Garnett, C. H. Liebermann, and W. H. Barrey. They filed statements that they had not directly or indirectly authorized Gautier to use their names.

The storm that this accusation caused can well be imagined. Dr. Garnett in particular was an individual with a low boiling point. He and the others were determined to prosecute their accuser, who also had his supporters. However, the accuser finally made an apology for his behavior, but the feud continued.

Dr. Garnett's feathers had been ruffled, and he decided to do some crusading on his own. He initiated an investigation to determine the extent to which Army and Navy medical officers engaged in private practice in the District of Columbia. His fire was directed against Dr. J. H. Baxter, USA, who, he said, "expressed a desire and willingness to visit a lady patient of mine." Dr. Baxter was found innocent of Dr. Garnett's charges. However, there were more complaints against medical officers thereafter.

Dr. Garnett was unique among the physicians in Washington not only because of his controversial nature. His contemporaries described him as being "strong-willed," with "untiring energy," "sympathetic," and having "an ardent nature." As a Virginian he had strong ties with the South. When the Civil War broke out he went to Simon Cameron, Secretary of War, and demanded a passport to Richmond saying he was loyal to the Southern cause. Cameron, one of the many public figures whom Dr. Garnett knew intimately, demurred but finally conceded to Dr. Garnett's request.

Dr. Garnett and his family moved to Richmond, where the strong-willed man became a personal physician to Jefferson Davis, President of the Confederacy, members of his Cabinet, General Robert E. Lee, and others prominent in the Confederate cause. Of course his property in Washington was confiscated.

The unbelievable part of Dr. Garnett's story is that after the War he returned to Washington, built a large practice, and eventually became President of the American Medical Association.

The Medical Association's history at the close of the century was marked by much controversy, complaints, and bickering between members, but the Association also had strong supporters which assured its survival and its effectiveness.

Relations with the American Medical Association

The Medical Society was deeply interested in the formation of the American Medical Association. The organization was first named the National Medical Convention and then the American Medical Association. The first meeting of the Association was held in Philadelphia on January 4, 1847. The Medical Society of the District of Columbia elected three of its members to attend this meeting.

There was friction in the Society afterward over the representation. As a result, thereafter they were either elected or appointed by the President. On one occasion the local newspapers were asked to keep the names of the delegates out of print for fear of resulting controversy.

Both the Medical Association of the District of Columbia and the Medical Society were later represented at American Medical Association meetings, from 1848 to 1855 and then none until 1866.

From 1869 to 1872 the Association was involved in violent controversy over the Medical Society's failure to admit Negro physicians. The controversy was carried to the American Medical Association meetings in 1870 and 1872. Forces opposing both local organizations attempted to get the American Medical Association to reject their delegates and to supplant them with a slate favorable to the admission of Negro physicians. However, the proposal was voted down.

During this controversy the Medical Association of the District of Columbia adopted a resolution allowing its members to consult with Negro physicians.

The American Medical Association met in Washington on May 4, 1858. At that time they elected Dr. Harvey Lindsly of Washington, President. He presided at the 1859 meeting.

Dr. Joseph M. Toner was elected President of the American Medical Association in 1874, and Dr. A. Y. P. Garnett in 1888. Several members had been Chairmen of Sections.

The Medical Association of the District of Columbia and the Medical Society of the District of Columbia were allowed one delegate for every ten members. After 1874 the Medical Association alone sent delegates to the American Medical Association.

AMA Medical Library and Journal

At the suggestion of Dr. Toner, the Medical Society offered to house the American Medical Association's library. Dr. Toner secured a room for that purpose at the Smithsonian Institution. The result was that the library was supervised by the Society for a number of years. It was finally moved to Chicago.

A resolution that *The Journal of the American Medical Association* be published in Washington was proposed by the delegates of the American Medical Association on November 12, 1890. The proposal lost by only a few votes.

Washington Hospitals

One of the hospitals which came into existence during the latter part of the 1800's was Providence (1866). Dr. Joseph M. Toner was the attending physician. It was announced that "any physician may send a patient to the hospital and can attend the same if he wishes to do so."

Freedmen's Hospital (1865) was an outgrowth of the Civil War, "a large number of freed people (having) drifted into the city." The Central Dispensary and Emergency Hospital (1871), Garfield Memorial Hospital (1882), and the Episcopal Eye, Ear and Throat Hospital (1897) later were combined to become the Washington Hospital Center (1958).

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Editorials

Walter Reed Medical Center—A Center with Many Missions

MOST PEOPLE reflecting on the name "Walter Reed" are thinking of or remembering instances involving Walter Reed General Hospital, which, in reality, is only one of many institutions making up a large campus, the Walter Reed Army Medical Center. The major components of the Center in addition to the world-famous hospital include: The Army Audiology and Speech Center; The Historical Unit of the U. S. Army Medical Department; The U. S. Army Institute of Dental Research and the U. S. Army Regional Dental Activity; The U. S. Army Medical Biomechanical Research Laboratory; The Walter Reed Army Institute of Nursing; and The Walter Reed Army Institute of Research. Not a component of the Center, but physically located on the "Campus" and taking an active part in support of the Hospital and its training programs through its expertise and accumulated materials, is the massive Armed Forces Institute of Pathology whose services are offered to and used by medical personnel world-wide.

Research, both basic and clinical, continues at an accelerated pace, and recent fruitful accomplishments of the Center include electromechanical joints and prostheses, a promising meningococcal vaccine, tissue adhesives, and many contributions to medical science in the fields of hematology, infectious diseases, vascular injuries, severe trauma and wound management, neuropsychiatry, and dental research.

The roles of the Center include education as one of the primary missions. In addition to the medical and dental internships, residencies and fellowships at the Hospital, postgraduate medical education at the Center includes many short and long courses in various aspects of pathology, trauma, surgery, global medicine, basic sciences, preventive medicine, advanced dental and oral surgery courses, and others too numerous to mention. Many foreign physicians, military and civilian, attend "Walter Reed" as trainees or observers for varying periods under the auspices of the State Department, World Health Organization, and Department of Defense. Locally, affiliations with the 3 medical schools and hospitals of Georgetown, George Washington, and Howard Universities result in medical students from all 3 being trained at Walter Reed General Hospital in regular rotations of their programs or in specially provided electives. A smaller number of third- and fourth-year medical students are accepted from medical colleges and universities country-wide for special elective training. Interns and residents from local university hospitals also rotate through many of the subspecialty areas at Walter Reed General Hospital.

Summarizing, Walter Reed General Hospital's first goal is care of the injured, the wounded, and the sick of the active Army, its retired personnel, and dependents, both from local sources and from referring military hospitals world-wide, but, along with other elements of the Army Medical Center it has large roles also in medical education and research.

I believe this issue of the ANNALS illustrates the varied roles and experiences of the Center. Some articles are militarily oriented as to trauma and tropical medicine; one describes hospital and patient care for such a problem as hepatitis after halothane; others feature advances in hematology with platelet kinetic isotope studies and a massive experience with tissue adhesives in neurosurgery; and, finally, there are broad educational and review papers on a major allergy-immunologic disease and non-neoplastic bowel disease. This wide range of subject matter was purposely selected from a large number of articles to illustrate with pride the diversity and spectrum of disciplines available at Walter Reed Army Medical Center.

COLONEL RAYMOND W. BLOHM, JR.,
Chief, Department of Medicine,
Walter Reed General Hospital

Opinions expressed in contributions to the Editorial Section arethose of the writer and do not necessarily reflect the views of the Medical Society of the Districtof Columbia

Dont's for the Practitioner

The Federal Bureau of Narcotics has prepared "Don'ts for the Practitioner" to protect him from narcotic addicts and abusers.

Don't fall for a story from a stranger claiming an ailment that usually requires morphine. The addict can produce bloody sputum, simulate bad coughs or other symptoms. Make your own diagnosis.

Don't give an Rx to anyone except the actual patient. Addicts have posed as nurses.

Don't write for large quantities of narcotics unless unavoidable. Diversion to addicts is profitable, as much as $1 for ¼ grain M.S.

Don't prescribe narcotics on the story that another physician has been doing so; consult that physician or hospital records.

Don't leave Rx's signed in blank for nurses to fill in; many have been stolen by addicts.

Don't treat ambulatory addicts. They must be under proper control; many go to several physicians at one time.

Titles in Medicine

A message from Dr. Robert S. Goodhart, Editor, and Dr. Arthur J. Lewis, Associate Editor, appearing in the first issue (March 1970) of *Titles in Medicine* states that this new periodical has been designed to meet "the practicing physician's requirement for ready access to explicit information on the who, what and where of current medical periodicals." A monthly publication, it carries the titles of articles currently appearing in up to 220 medical, public health, and scientific journals published in the English language.

The journals included in *Titles* were selected primarily on the basis of studies of demand (for English language journals only) conducted for the New York Academy of Medicine Library, and the original list was then modified according to the advice of the Editorial Board.

The Medical Annals of the District of Columbia is one of 9 state medical journals included in the list. The Medical Society of the District of Columbia is represented on the distinguished Editorial Board by Dr. George W. Hyatt, Professor of Orthopedic Surgery at Georgetown University School of Medicine.

Titles is sent without charge to specific qualified physicians and surgeons. Regular subscription price is $15 a year ($17, Canada and foreign); address: 369 Passaic Avenue, Fairfield, N. J. 07006.

Reprints of most of the articles listed in the monthly issues of *Titles in Medicine* can be obtained by subscribing to the Reprint Order Service. An annual fee of $30 payable to Communico, Inc. (same address as above) includes 24 reprints of the reader's choice during the coming year. A special order form bound in the issue provides for ordering reprints by journal and article number. Requests for reprints from scientific publications of the American Medical Association will be handled directly from AMA headquarters at 535 North Dearborn Street, Chicago.

A. L. E.

A Book for the Medical Philatelist

"Medicine and Stamps," recently published by the American Medical Association, is a book devoted to stamps honoring distinguished physicians and scientists of many countries. It originated from a postage stamp exhibit by the late John A. Mirt at an AMA meeting in Miami, Florida, in 1960, and many of the biographical vignettes which the book contains are credited to Mr. Mirt. The editors, R. A. Kyle, M.D., of the staff of Mayo Clinic, and M. A. Shampo, Ph.D., of the Section of Publications of Mayo, have also contributed much of the text. Most of the vignettes (over 200) have appeared in the *Journal of the AMA* since 1961.

The biographical sketches, each with a reproduction of the stamp honoring the scientist, are presented in alphabetical order. The table of contents lists the individuals by the name of the country issuing the stamp. France, with her Bernard, Calmette, Charcot, Laënnec, Leriche, Paré, Pinel and many others, is credited with the greatest number, 25 in all. However, Curie, for instance, is listed under the Central African Republic instead of France where the work on radium was done.

Austria is the country of origin for 13 stamps, The Netherlands 9, Belgium 8, Cuba 7, and Germany, Poland, Russia and the United States, 6 each. The U. S. is represented by Barton, Long, Mayo, McDowell, Reed, and Wiley, all native-born.

The listing in the Index is by the field of medicine—29 for Bacteriology, 21 for Tropical Medicine, 18 for Early Medicine, and 17 for Immunology; several unusual fields are included, such as Esperanto, Missionary Medicine, and Mythology.

To anyone who loves stamp collecting this book would make a delightful gift. It sells for $4 in the United States (the price of $1, printed in the book, is incorrect), and it may be ordered from the AMA, 535 North Dearborn Street, Chicago, Ill. 60610. In its red book jacket, adorned with many stamps reproduced in color, it would make a bright ornament on any desk or coffee table.

A. L. E.

Executive Editor Honored at Testimonial Dinner

After 32 years of devoted and outstanding service to the Medical Society of the District of Columbia, Miss A. Louise Eckburg, Executive Editor of the Annals, is retiring. This will be a great loss to all of us and especially to me, the Editor of the Annals. We have worked many hours together in complete harmony. She has taught me much, and I hope I have taught her something.

On June 11, 1970 a testimonial dinner was given for her at the Le Provençal Restaurant, which was attended by 31 persons including officers, Past Presidents, friends, Theodore Wiprud, former Executive Director, Thomas Sadler, present Executive Director, and Warren E. Magee, legal counsel.

Dr. Frank S. Pellegrini, President of the Society, made some remarks and presented a gift from the Waverly Press, which has published the Annals all 38 years of its existence. Dr. Robert J. Coffey, Chairman of the Executive Board, spoke and presented a generous check from the Society. Dr. Zigmond M. Lebensohn presented her, in behalf of her friends, with an inscribed gold charm and an exquisite bowl of Lalique crystal. Mr. Wiprud, who employed Miss Eckburg for the Society, made comments, which follow.

Louise responded with farewell remarks.

All in all, it was a fun party, but also sad because it meant that Miss Eckburg is leaving us.

Wallace M. Yater, M.D.
Editor

Remarks by Mr. Wiprud

It seems hardly possible that it will be 32 years ago this coming October that I employed Miss Eckburg as the Medical Society's Executive Clerk, which included work on the Annals. This turned out to be fortunate for her, the Medical Society, the Medicals Annals, Dr. Yater, and myself. She was unusually well equipped by education and personality for the assignment and has done an outstanding job.

As a close associate for nearly a quarter of a century, I can tell you, without reservation, of her fine qualities, of which there are many. First and foremost is her unwavering loyalty. A battalion of employees passed through the Medical Society's offices during my tenure. Some stayed a few years, others only days. It was especially bad during World War II. In this situation I knew I could count on one person, Miss Eckburg.

A. LOUISE ECKBURG

Another fine quality is her complete honesty. That is not always easy to come by these days.

And finally, there is her dedication to her task and her insistence on perfection. Other workers at the Medical Society could never measure up to her on this score.

I am glad to tell you that Miss Eckburg was not only my able associate but was and is my friend.

She is fortunate in having many interests, and for such a person the future is bright. There will always be new challenges which contribute to satisfaction and happiness.

Miss Eckburg was born in Pecatonica, a small town in Northern Illinois, where she attended high school and was valedictorian of her class. She completed her studies in liberal arts at the University of Minnesota in 3 years and received her degree *cum laude* in 1931. Two years later she moved to Washington and was employed as secretary to a staff member at the headquarters of the American Association of University Women. She came to the Medical Society in 1938 as Executive Clerk, which position encompassed membership, bookkeeping and supervisory duties along with preparing the ANNALS, which was a small journal at that time, for publication. As the years wore on and the ANNALS became a full-time position, she was named Editorial Assistant, then Assistant Editor in 1948 and, in 1968, Executive Editor.

Louise, who is a member of Phi Mu sorority, has taken an active part as officer and committee member in the Mid-Atlantic Chapter of the American Medical Writers' Association, the Washington Zonta Club, and the Women's League for Traffic Safety. She is listed in the sixth edition of "Who's Who of American Women." Reading, photography and painting are some of her leisure pleasures to which she will undoubtedly devote more time in her retirement years.

Cancer Patients Needed for Clinical Center Studies

THE COÖPERATION OF PHYSICIANS is requested in the referral of patients for a continuing study of squamous-cell carcinoma of the oral cavity, pharynx, and larynx being conducted by the Radiation Branch of the National Cancer Institute at the Clinical Center of the National Institutes of Health in Bethesda, Md.

Previously untreated patients with moderately advanced or advanced disease will be evaluated for treatment with radiation therapy. Suitable patients will be admitted for further studies and treatment.

Physicians interested in having their patients considered for admission to this study may write or telephone Dr. Thomas C. Pomeroy, Clinical Center, Room B1B-41, National Institutes of Health, Bethesda, Md. 20014; telephone (301) 496-5457.

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Alexandria

Injectable
Garamycin®
brand of gentamicin sulfate injection

*An estimated 208,000 patients have received GARAMYCIN Injectable to date. The combined population of Alexandria, Va., and Silver Spring, Md., is 199,500. (Estimated 1969 figures from The New York Times Encyclopedic Almanac 1970.)

See Clinical Considerations section on last page...

Mounting acceptance in the hospital...

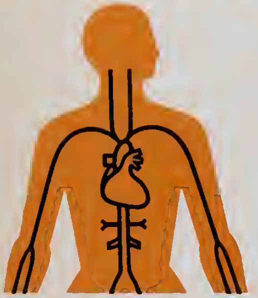
Proven clinical effectiveness

Respiratory Infections

Outstanding results in serious gram-negative respiratory infections[1,2]
GARAMYCIN Injectable may prove successful where other antibiotics have failed.

Urinary Tract Infections

Strikingly effective in selected urinary tract infections[3]
With relatively low intramuscular doses, the promptly attained levels of GARAMYCIN achieved in the urine are considerably higher than the concentrations required for effectiveness against virtually all susceptible gram-negative pathogens. (Appropriate precautions are indicated in patients with impaired renal function; consult Package Insert for full details.)



Septicemia

May be lifesaving[4-6]
Numerous investigators have drawn attention to the value of GARAMYCIN Injectable in the treatment of gram-negative septicemias, often complicated by shock. Many hospital strains of *Serratia* are susceptible.[6]

Wounds and Burns

Response may be dramatic in wounds and burns complicated by sepsis[7]
The established efficacy of GARAMYCIN Injectable against *Pseudomonas*—as well as most other gram-negative pathogens—makes it an especially useful agent in the treatment of infected wounds and burns.

Important Precautionary Note Patients receiving treatment with GARAMYCIN Injectable (gentamicin sulfate injection) should be under close clinical observation because of the toxicity associated with the use of the drug. Ototoxicity, vestibular and auditory, can occur in patients, primarily those with preexisting renal damage, treated with GARAMYCIN Injectable for longer periods or with higher doses than recommended.

GARAMYCIN Injectable is potentially nephrotoxic, and this should be kept in mind when it is used in patients with preexisting renal damage.

This drug should be limited to the treatment of serious infections caused by susceptible gram-negative bacteria, with due regard for relative antibiotic toxicity. (See Clinical Considerations section.)

Mounting evidence in the laboratory...

Schering

Over 95% gram-negative pathogens sensitive.*

No other antibiotic performed comparably *in vitro* against gram-negative pathogens.
In a nationwide culture audit of antibiotic sensitivity patterns, sensitivity reports from 106 hospitals, geographically representative by census tract and of varying sizes, were analyzed. During the three-month period, ***every*** gram-negative culture slip from ***every*** hospital was surveyed. The total number of cultures involved in the audit was 97,091. The total number of sensitivity determinations was 643,503.

	Percentage of sensitive strains Number of strains tested			**Antibiotics***				
Pathogens	**Garamycin**	**Kanamycin**	**Cephalothin**	**Cephaloridine**	**Ampicillin**	**Colistimethate**	**Chloramphenicol**	**Tetracycline**
Klebsiella pneumoniae	**99.5%** 962	**84.7%** 992	**86.2%** 995	**76.1%** 67	**32.7%** 1,020	**96.3%** 640	**82.9%** 1,028	**77.1%** 1,026
Aerobacter aerogenes	**95.9%** 2,739	**86.1%** 2,818	**53.5%** 2,985	**58.8%** 1,514	**22.7%** 3,066	**88.6%** 2,603	**85.8%** 3,071	**67.8%** 2,981
Klebsiella aerobacter group	**98.8%** 566	**83.9%** 547	**66.1%** 522	**60.5%** 276	**28.0%** 553	**89.5%** 560	**86.2%** 587	**62.8%** 433
Klebsiella, all others	**92.7%** 2,944	**83.3%** 3,186	**77.4%** 2,976	**67.5%** 627	**13.5%** 2,883	**95.0%** 2,105	**81.6%** 3,212	**70.6%** 3,063
Pseudomonas aeruginosa	**91.6%** 4,528	**29.8%** 4,460	**6.6%** 4,418	**6.6%** 1,279	**6.0%** 4,360	**91.3%** 3,852	**26.9%** 4,608	**26.4%** 4,404
Proteus, indole-positive	**91.8%** 1,031	**85.8%** 1,062	**39.9%** 981	**54.1%** 364	**40.2%** 1,042	**10.3%** 758	**76.1%** 1,096	**42.1%** 1,051
Proteus mirabilis, indole-negative	**94.9%** 3,272	**90.1%** 3,378	**83.1%** 3,290	**77.5%** 975	**78.0%** 3,274	**8.8%** 2,634	**85.9%** 3,469	**26.8%** 3,278
Proteus, unspecified	**96.2%** 1,335	**85.8%** 1,371	**71.7%** 1,434	**70.0%** 647	**64.7%** 1,435	**11.2%** 1,233	**76.0%** 1,421	**22.4%** 1,298
Escherichia coli and all other Escherichias	**96.4%** 12,557	**91.4%** 12,818	**87.8%** 12,686	**88.8%** 4,251	**74.6%** 12,899	**95.4%** 10,623	**94.1%** 13,086	**70.0%** 12,559
Paracolobactrum, all	**93.4%** 303	**88.9%** 325	**62.0%** 305	**74.2%** 62	**43.8%** 340	**80.9%** 215	**87.1%** 350	**72.6%** 340
Coliform bacteria	**99.0%** 593	**91.2%** 649	**81.5%** 637	**66.7%** 21	**52.7%** 624	**95.6%** 607	**91.6%** 678	**76.1%** 637
Totals	**95.1%** 30,830	**80.5%** 31,606	**65.3%** 31,229	**68.1%** 10,083	**50.3%** 31,496	**75.8%** 25,829	**79.7%** 32,606	**56.5%** 31,070
Gram-positive (included for consistency with Package Insert, not an approved indication)								
Staph—S. aureus, coagulase-positive	**97.4%** 1,548	**88.8%** 1,458	**97.7%** 2,050	**98.7%** 636	**61.1%** 1,559	**20.4%** 628	**94.4%** 2,123	**83.7%** 1,966
Staph—S. aureus, unspecified	**99.3%** 993	**92.8%** 902	**98.1%** 1,289	**95.3%** 213	**45.8%** 1,153	**29.3%** 116	**96.4%** 1,427	**82.3%** 1,360

*Adapted from a three-month, nationwide hospital audit by R. A. Gosselin and Co., Inc., Dedham, Massachusetts (mid-May to mid-August, 1969).[6]
Antibiotics with significant gram-negative spectra are included. Organisms are listed as reported by laboratory.

Sensitivity testing was done by the disc method, a generally reliable test in the hospital setting. It should be noted, however, that the results with GARAMYCIN were somewhat higher than the results reported where the tube dilution technique was used. (See Clinical Considerations section which follows.) The concentration of the GARAMYCIN disc was 10 mcg.

Whereas standard testing methods were used by all hospitals, it is acknowledged that in a survey of this kind considerations such as differences in methodology are possible sources of error. The comparative percentage-sensitivity results derived from a survey of this kind are, therefore, not absolute. One should keep in mind also that the proper selection of an antibiotic is based not only on susceptibility testing but on relative toxicity and other clinical considerations as well.

It is felt, nonetheless, that the broad scope of the survey and the extreme care in data collection and tabulation permit a conclusion that the results are *generally* representative of current nationwide antibiotic sensitivity patterns.

Injectable
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brand of
gentamicin sulfate injection

See Clinical Considerations section on last page...

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ADULT DOSAGE GUIDELINES

See definitive prescribing information in Package Insert.

Patients with Normal Renal Function

Total Daily Dose (administered in two, three, or four divided doses)			
	Less Severe	**Resistant/ Moderately Severe**	**Serious/Life-Threatening**
Urinary Tract Infections (due to susceptible strains of gram-negative bacteria)†	0.8-1.2 mg./kg. for 7-10 days	Larger doses or additional antibacterial therapy should be considered in severe urinary tract infections or in resistant cases involving the renal parenchyma or anatomic anomaly.	up to 5 mg./kg.
Other Infections including bacteremia, infected surgical wounds, severe soft tissue infections, and respiratory tract infections (due to susceptible strains of gram-negative bacteria)	3 mg./kg. for 7-10 days		

†Alkalinization of the urine may be a useful therapeutic adjunct.

Patients with Impaired Renal Function

To minimize the risk of ototoxicity in patients with impaired kidney function, only the first dose should be that normally recommended. Each subsequent dose should be half or less of that recommended for patients with normal renal function, depending upon the degree of renal impairment.

In patients with renal failure who are undergoing 14-hour hemodialysis twice weekly, administration of 1 mg./kg. GARAMYCIN Injectable at the end of each dialysis period has been suggested.

Clinical Considerations

Indications: Garamycin Injectable is clinically effective in infections due to susceptible strains of gram-negative bacteria, including *Pseudomonas aeruginosa,* and species of indole-positive and indole-negative *Proteus, Escherichia coli,* and *Klebsiella-Aerobacter.* Bacteriologic studies should be conducted to identify the causative organism and to determine its sensitivity to gentamicin sulfate. Sensitivity discs of the drug are available for this purpose. If the susceptibility tests indicate that the causative organism is resistant to gentamicin sulfate, other appropriate antibiotic therapy should be instituted.

IN VITRO INHIBITION OF CLINICALLY IMPORTANT BACTERIA BY GENTAMICIN SULFATE (TUBE DILUTION STUDIES)

BACTERIA	No. of Strains Tested	No. of Strains (%) Inhibited by: 4 mcg./cc. or less	8 mcg./cc. or less*	No. of *In Vitro* Studies
Staphylococcus aureus	1,210	1,200 (99%)	1,206 (99%)	11
Pseudomonas aeruginosa	885	771 (87%)	828 (93%)	16
Escherichia coli	836	736 (88%)	779 (93%)	11
Indole-positive and indole-negative *Proteus* species	477	210 (44%)	358 (75%)	12
Klebsiella-Aerobacter species	292	205 (70%)	231 (79%)	10

*Number of strains (%) of gram-negative bacteria inhibited by 10 mcg./cc. or less are as follows: *Pseudomonas aeruginosa,* 828 (93%); *Escherichia coli,* 792 (95%); *Proteus* species, 393 (82%); *Klebsiella-Aerobacter* species, 284 (97%). From same studies as above.
Source: Package Insert

This drug should be limited to the treatment of serious infections caused by gram-negative bacteria, particularly *Pseudomonas aeruginosa, Proteus* and other susceptible organisms, with due regard for relative antibiotic toxicity. Therefore, the drug should be considered for use against gram-negative: 1. Bacteremia; 2. Infected surgical wounds; 3. Severe soft tissue infections, including burns complicated by sepsis; 4. Respiratory tract infections; and 5. Selected cases of urinary tract infection.

Contraindications: Garamycin Injectable is contraindicated in individuals with a history of hypersensitivity or toxic reactions to gentamicin.

Warnings: Patients receiving treatment with GARAMYCIN should be under close clinical observation because of the toxicity associated with the use of this drug. Ototoxicity, vestibular and auditory, can occur in patients, primarily those w pre-existing renal damage, treated with GARAMYCIN Injecta usually for longer periods or with higher doses than recommenc

GARAMYCIN Injectable is potentially nephrotoxic, and t should be kept in mind when it is used in patients with pre-exist renal impairment. Kidney function diminished by infection of upper urinary tract may, however, improve during effective tr ment with Garamycin Injectable.

Concurrent administration of potentially ototoxic drugs such streptomycin and kanamycin or of potentially nephrotoxic dr such as polymyxin, colistin, and kanamycin with gentamicin sul has not been shown to afford any clinical advantages and, moreo may result in additive toxicity. Monitoring of vestibular, cochl and renal function will provide guidance for therapy in such ca

Precautions: In patients with impaired renal function in wh serious infection develops, serum concentrations of the drug ı rise, with consequently increased risk of ototoxicity. In these tients or in those in whom recommended dosage or duration therapy must be exceeded as a life-saving measure, routine stu of kidney function should be performed when possible. These ı be supplemented by evaluation of the vestibular and auditory fı tion and measurement of serum concentration of the drug w feasible. Serum concentrations of gentamicin should be maintai below the range of 10-12 mcg./ml. to reduce risk of ototoxicity

Ordinarily, treatment should not be given for more than 7 tc days or be repeated unless required for serious infection not sponsive to other agents.

As with other antibiotics, treatment with Garamycin Inject may occasionally result in overgrowth of nonsensitive organism superinfection occurs, appropriate therapy is indicated.

Safety for use in pregnancy or the potential for fetal ototoxicit nephrotoxicity have not been established. Studies in pregnant mals have not revealed teratogenic or ototoxic effects in the fe Garamycin Injectable should not be used in pregnant patient in women of childbearing age unless its use is deemed advis by the physician.

Adverse Reactions: The overall incidence of ototoxicity consid related to treatment with Garamycin Injectable was 2.8 per (16 of 565 patients). Contributory factors (two or more factors relevant to most patients) were as follows: 10 had azotemia received a total of 1 gram or more of the drug, 7 had recently ceived other potentially ototoxic antibiotics (streptomycin or k mycin), and 5 were over 60 years of age. Six also had decre high-tone hearing acuity, which returned to or toward norma the 4 patients retested.

Analysis of BUN data indicated that 4 (2%) of 172 patients shc increases in BUN that were probably related to treatment Garamycin Injectable. Of 20 increases probably or possibly rel to treatment, 7 were reversible, 9 occurred in terminal patients, 4 had no follow-up.

Other adverse reactions associated with treatment were one inst each of urticaria, decreased hematocrit, and reversible depre of granulocytes with normal bone marrow. Other rarely repc and possibly treatment-related adverse reactions were anemia creased reticulocyte count, rash, purpura, drug fever, hypoten convulsions, twitching, salivation, nausea, vomiting, increased t aminase activity (SGOT or SGPT), increased serum bilirubin creased serum calcium, and joint pain.

Packaging: Garamycin Injectable, 40 mg./cc., 2-cc. multiple vials, for intramuscular administration.

References: (1) Brayton, R. G., and Louria, D. B.: Gentamici gram-negative urinary and pulmonary infections, Arch. Int. *114*:205, 1964.* (2) Louria, D. B.; Young, L.; Armstrong, D., Smith, J. K.: Gentamicin in the treatment of pulmonary infect J. Infect. Dis. *119*:483, 1969. (3) Cox, C. E.: Gentamicin, a aminoglycoside antibiotic: Clinical and laboratory studies in ur tract infections, J. Infect. Dis. *119*:486, 1969. (4) Groll, E.: Cli experience with gentamicin, data from 12 German clinics, in tamicin: First International Symposium, Paris, January Lucerne, Essex Chemie AG, pp. 121-128.* (5) Jackson, G. G.: La tory and clinical investigation of gentamicin, *ibid.*, pp. 62-7 Medeiros, A. E.: Discussion, J. Infect. Dis. *119*:533, 1969. (7) Poll Discussion, J. Infect. Dis. *119*:529, 1969. (8) Three-month, nation hospital audit by R. A. Gosselin and Co., Inc., Dedham, Massach (mid-May to mid-August, 1969).

*Dosage in this investigational study was less than now recomme in Package Insert.

For more complete prescribing details, consult package inse Physicians' Desk Reference. Schering literature is also avai from your Schering Representative or Medical Services Depart Schering Corporation, Union, New Jersey 07083.

AHFS CATEGORY 8:12.28

►HEALTH DEPARTMENT NOTES

Lead Poisoning in Children

HEALTH REGULATIONS of the District of Columbia have been amended to include "plumbism" as a reportable disease. Part 3 of Title 8 notes that "any physician who diagnoses or treats a case of lead poisoning shall within 72 hours report such case to the Director of Public Health on a form prescribed and furnished by the Director. Any physician violating or failing to comply with the requirements shall upon conviction be punished by a fine of not more than $300."

Also, a new Part 9 has been included in the law to prohibit the use of lead paint on toys, furniture, or interior surfaces. Part 9 explains: "It shall be unlawful for any person to apply to any toy, article of furniture, or exposed interior surface of any habitation, paint containing lead or its compounds in a quantity in excess of 1 per cent by weight of total nonvolatile material."

In the regulations "interior surface" means any exposed surface in the interior of any residential building, including, but not limited to, any portion of a window, window frame, door, door frame, wall, ceiling, stairs, rail, spindle, balustrade, or other guard or appurtenance.

The regulations state: "Any person who violates any provision of these regulations shall, upon conviction, be punished by a fine not to exceed $300 or imprisonment not to exceed 10 days for each violation."

As in Baltimore, New York City, Chicago, and other large cities, lead poisoning is a problem in Washington. It has been estimated that more than 500 children are stricken with lead poisoning each year in the District of Columbia. Approximately 225,000 children in the United States are afflicted with this health problem.

Lead poisoning in the District of Columbia is related to the estimated 22,000 dwellings in the District that are considered substandard. The interiors of many of these houses were painted with lead-base paint prior to World War II. As the paint deteriorates from the ceilings, walls and trim, it drops to the floor and is accessible to children.

About 47,595 children, between the ages of 6 months and 6 years, live in these houses. The Medical Committee on Human Rights estimates that about 10 per cent of the children living in substandard homes have been subjected to lead poisoning.

Forty-five clinical cases of plumbism were diagnosed at Children's Hospital during 1968. It is estimated that approximately 5,000 children have significant amounts of lead in their systems and many others are exposed to lead. In many cases lead poisoning is not suspected until severe and irreparable brain damage has been done. There is a relationship between lead poisoning and mental retardation of children.

There are many who are generally unaware of the significance of lead poisoning in children. There is a need for a vigorous educational and informational program among physicians and hospital staffs to increase their awareness of the possibility of plumbism in their patients.

Most children who are victims of lead poisoning are those afflicted with pica, the condition that gives them a craving for unnatural food, such as peelings and flakings of paint, chalk, ashes, starch, and the like. Parents, particularly those with small children, must be advised of the dangers involved. They should be alert and discourage children from eating paint chips.

Symptoms of lead poisoning are not always recognized. These include irritability, convulsions,

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drowsiness, stomach ache, constipation or diarrhea. New tests are being devised to detect plumbism by using the patient's hair and finger nails rather than the present need to take urine and blood samples.

Physicians should always be ready to offer advice on preventive measures relating to lead poisoning. For example, parents and baby-sitters can keep children from chewing on painted surfaces. They also can keep paint chips off the floor and out of reach of children. All sources of lead should be removed. Steps should be taken to keep any child suspected of eating lead from further exposure. Physicians and others should watch for early symptoms of lead absorption, such as vomiting and stomach ache, irritability, convulsions, listlessness and lack of appetite. Quick and accurate diagnosis and proper and careful treatment should start immediately. When a case is found, other children in the home should be examined also for possible signs of lead intoxication.

The first stage of a lead poisoning prevention program in the District of Columbia was inaugurated in June when the D.C. Health Services administration in coöperation with the United Planning Organization and the Medical Committee for Human Rights, screened some 900 children between the ages of 18 months and 4 years for signs of lead poisoning. Most of these children live in District substandard housing.

It is our intention, in coöperation with others, to find and bring to treatment those children with lead poisoning.

RAYMOND L. STANDARD, M.D., D.P.H.
D. C. Director of Health Services Administration

NEW MEMBERS

Active

PETER M. BERKMAN, M.D. Office: Washington Hospital Center. Born in New York City. Medical degree: Columbia College of Physicians and Surgeons, 1959. Specialty: Internal Medicine (Renal Diseases).

CESAR AUGUSTO CACERES, M.D. Office: 2300 K Street, N.W. Born in Puerto Cortes, Honduras. Medical degree: Georgetown University, 1953. Specialty: Internal Medicine.

FREDRIC JAY COPLON, M.D. Office: St. Elizabeths Hospital. Born in Orlando, Fla. Medical degree: Tufts University, 1968. Specialty: General Practice.

THEODORE R. GEORGE, SR., M.D. Office: 1912 16th Street, N.W. Born in Surry, Va. Medical degree: Howard University, 1930. Specialty: Ophthalmology.

KEITH MERRITT LINDGREN, M.D. Office: Georgetown University Hospital. Born in Minneapolis, Minn. Medical degree: Harvard Medical School, 1963. Specialty: Internal Medicine (Cardiology).

JOHN HOUSDEN LANE MARSHALL, M.D. Office: 901 East Capitol Street, S.E. Born in Washington, D.C. Medical degree: George Washington University, 1962. Specialty: Psychiatry.

DAVID ARTHUR MOROWITZ, M.D. Office: Andrews AFB Hospital. Born in Chicago, Ill. Medical degree: University of Illinois, 1963. Specialty: Internal Medicine (Gastroenterology).

ATA-OLAH MOSHYEDI, M.D. Office: 2121 Pennsylvania Avenue, N.W. Born in Rasht, Iran. Medical degree: Teheran University, Iran, 1961. Specialty: Internal Medicine.

OTTO HOWARD SALSBERY, M.D. Office: 730 24th Street, N.W. Born in Portsmouth, Ohio. Medical degree: University of Cincinnati, 1941. Specialty: Orthopedic Surgery.

JOHN BLAIR WEBSTER, M.D. Office: 1250 Connecticut Avenue, N.W. Born in Cleveland, Ohio. Medical degree: Western Reserve University, 1959. Specialty: Occupational/Nuclear Medicine.

Associate

MARTIN SAMUEL WOLFE, M.D. Office: Department of State. Born in Scranton, Pa. Medical degree: Cornell Medical College, 1961. Specialty: Internal Medicine (Parasitology and Tropical Diseases).

DOCPAC BRIEFS

or

Be There Next Year!

FUN AND FOOD (with much for thought) were featured at the banquet at the Army-Navy Club, May 28, which marked the end of the 1969–1970 year for DOCPAC, the District of Columbia Political Action Committee. Chairman William H. Cooper adjourned the dinner meeting at a late hour, but members and guests stayed on for further discussion with the 2 able young speakers, Senator Mike Gravel (D–Alaska) and Senator Robert W. Packwood (R–Oregon), who championed the ideals and aspirations of American youth and were in accord with their repudiation of the Southeast Asian War. To describe our young people they used such euphemistic phrases as "electric generation," "instant maturity," and "introspective generation" which wants "action now." Questions from the floor during the discussion period brought more reflective replies. There should be more such meetings between DOCPAC and members of Congress, and there should be more DOCPAC members to listen and to join in such political discussion. Among DOCPAC's objectives are to become informed and to inform others so the medical profession can as a unit act knowledgeably and effectively on national issues.

Mrs. Lawrence (Ann) Rapee, Vice Chairman of DOCPAC since it was organized in 1965, was called to the podium to receive an inscribed silver tray presented in recognition of her many years of enthusiastic and dedicated service.

Dr. Frank S. Pellegrini, President of the Medical Society of the District of Columbia, was asked to introduce Senator Gravel, and Dr. Raymond T. Holden, AMA Trustee and long active in the D. C. Medical Society, introduced Senator Packwood. Among those especially recognized at the meeting were Dr. Marvin C. Korengold, President-elect of the Medical Society; Dr. C. Willard Camalier, the Medical Society's junior delegate to the AMA; Dr. Richard T. Sullivan, the "father" of DOCPAC; Dr. Josephine E. Renshaw, President of the Women's Medical Association; and Dr. Anthony P. Culotta, President-elect of the D. C. Dental Society.

Dr. Cooper, who sparks DOCPAC, would like to see every Medical Society member a DOCPAC member and more members from the dental, pharmaceutical, and nursing professions. The dues, still $20.00 for individuals and $30.00 for family membership, can be sent to Dr. Cooper at 825 New Hampshire Avenue, N.W., Washington, D. C. 20007.

A. L. E.

"A Tribute to the Work of a Great Man"

With these words of praise the Honorable Slaheddine El Goulli, the Ambassador of Tunisia, welcomed some 200 colleagues, relatives and friends of Dr. William B. Walsh to the Tunisian Embassy, May 25, for the presentation of the Laetare Medal of Notre Dame University. The *S. S. Hope* is currently stationed in Tunisia.

The Reverend Theodore M. Hesburgh, C.S.C., President of Notre Dame University, personally presented the medal to Dr. Walsh and read the accompanying citation which included the statement:

> "Your ship is a symbol of that for which thoughtful and ignorant people alike have yearned for centuries—that swords may at last be transformed into ploughshares, that the battle cruiser may be no more and that the floating hospital can become the symbol of our strength in the future."

Dr. Walsh, founder, President and Medical Director of Project HOPE, is the ninth physician to receive the Laetare Medal, the highest award of Notre Dame, which has been conferred since 1883 on 71 men and 18 women representing a broad and brilliant spectrum of American Catholic leadership. Among the medal recipients have been the late President John F. Kennedy, Supreme Court Justice William Brennan, Jr., George Meany, President of the AFL-CIO, and Clare Booth Luce.

The medal is a solid gold disc suspended from a gold bar with the inscription, *Magna est veritas et praevalebit* (Truth is mighty and will prevail) on one side and reproduced, on the reverse, for Dr. Walsh, the Caduceus and the *S. S. Hope.*

DR. WALSH, President of Project HOPE, receives the Laetare Medal from Father Hesburgh, President of Notre Dame University. His Excellency The Ambassador of Tunisia (right) was host at the Tunisian Embassy for the presentation.

In a gracious response Dr. Walsh said he spoke also for his family and for the many who have served with him. Medicine, he noted, has been called "one of the bridges to peace. But there will be no bridges worth crossing, no peace worth achieving, if man cannot regain his human spirit and his faith in himself and his fellow man." Referring to the inscription on the medal he said, "We can live in truth only if it rests upon a foundation of faith, trust and spiritual love."

Dr. Walsh has been honored by more than 40 governments, universities, and organizations. A medical graduate of Georgetown University, he later served as Assistant Professor of Internal Medicine. In 1960, with the encouragement of President Eisenhower, the *S. S. Hope* sailed on its maiden voyage to the Far East. Through the years more than 1,500 volunteer American medical personnel have served aboardship, some 11,000 major operations have been performed, more than 129,000 patients have been treated, and 5,000 indigenous persons have been trained in medical and paramedical techniques.

Dr. Walsh has told his story of Project HOPE in 3 books, "A Ship Called HOPE," "Yanqui, Come Back," and "HOPE in the East: The Mission to Ceylon."

Following the brief ceremony, Dr. Walsh's friends gathered to congratulate him and to enjoy a social hour and a buffet supper.

PHYSICIANS'
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THE MEDICAL SOCIETY'S **Physicians' Placement Committee** maintains a service to benefit its members and other physicians by locating suitable openings, assistants or associates. It will also assist Government agencies and industrial organizations to secure physicians for their Medical Departments. Call 223-2230—ask for Placement Service.

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LETTERS TO THE EDITOR

Abortion on Demand

Part of the price you have to pay for your editorial freedom is the publication of opposing points of view.

It involves, unfortunately, printing such offerings of the pitiful peddlers of PISH (Popularization of Infanticide by Scientific Humanism) as the editorial and letters supporting abortion on demand in the May issue of the ANNALS.

Abortion involves the direct killing of an innocent and helpless human being; no amount of euphemistic verbiage can cloak the stark fact of the matter.

Yesterday, birth prevention—popularized by calling it prophylaxis or sexual hygiene; today, abortion—disguised by prostituting the noble word "therapeutic"; tomorrow, no doubt, parricide—sanctified by the mellifluous title "euthanasia."

Such is the inexorable logic of the denial of the moral order implicit in your correspondents' views.

A detached observer of the descent into savagery of our civilization, bitterly condemned as such in the case of a handful of soldiers under stress in Vietnam but applauded as humanitarian when it involves the innocent unborn victims of uncontrolled self-indulgence—such an observer might be forgiven the cynical thought that such a manifest drive to self-destruction must soon rid us of all rational humanists.

But unlike the Gaddarene Swine described in Scripture, they are likely to draw back at the edge of the precipice.

The liberal humanism of 19th Century Europe left to the Nazis and Communists the implementation of the logic of its "new morality."

Only God in His wisdom can foresee to what its counterpart on this continent will lead.

May He deliver us from all evil.

SEAN O'REILLY, M.D., F.R.C.P.
Professor and Chairman, Department of Neurology, George Washington University School of Medicine

Gordon Medical Scholarship Program

I thank you for your kindness in reprinting the letter concerning the Gordon Medical Scholarship Program in the May 1970 issue of MEDICAL ANNALS. I certainly will be overjoyed if some physician from the District of Columbia will come up with a medical scholarship for one of your local worthy premedical students.

MAURICE B. GORDON, M.D.

News & Personals

Summary of Executive Board Actions

Proceedings of May 18 Meeting

Dinner for the Board members was served in the Exhibit Hall of the Medical Society. Dr. Robert J. Coffey presided at the meeting that followed, which was attended by Drs. William S. McCune, Frank S. Bacon, Frank S. Pellegrini, Marvin C. Korengold, Howard Katzman, James E. Boland, C. Willard Camalier, Jr., and Mr. Thomas Sadler, Secretary.

The minutes of the April 27 meeting were approved.

Committee Meetings: The Secretary reported the following committees had met since the last meeting of the Board:

April	28	Committee on Alcoholism
	30	Traffic Committee
May	1	Program Committee, Scientific Assembly
	5	Subcommittee on Community Health Week
	5	Committee on Society Insurance
	6	Fee Review Committee
	7	Committee on Ruffin and Other Bequest Funds
	11	Committee on Environmental Health
	12	Board of Credentials

Board of Credentials: On recommendation of the Board of Credentials, 10 applicants were elected to Active membership and 1 to Associate membership. Their names appear on page 000.

Approval was given to the following changes in membership status:

Transfers

Active to Associate: Larry Wayne Stanton
Resident-Intern to Active: Michael A. Lemp

Resignations

Active: Robert C. Hill and David N. Robb
Associate: J. Marion Bankhead and Peter A. Santucci

Dr. Louise O. Wensel was reinstated to Active membership.

Committee on Public Information and Education: Approval was given to the plans and proposals submitted by the Committee for the 1970 Community Health Week to be held October 18–24.

Committee on Public Welfare: The Board took the following actions on 4 recommendations of this Committee:

1. To refer to the Legislative Committee the recommendation that the Medical Society coöperate with the D. C. Government in securing legislation which would license physicians temporarily in order to meet an emergency need for medical service to D. C. residents. The temporary license would be given physicians who are not licensed to practice in the District of Columbia but who would volunteer to serve on a D. C. health project.

2. To accept in principle the evaluation and endorsement where indicated of new and special programs, such as massive immunization, with the support of the D. C. Health Department; also, to supervise mass immunization clinics to combat German measles in September, 1970.

3. To accept the recommendation that the Medical Society assist the D. C. Health Department in publicizing information about the Supplemental Foods Program of the Public Health Department.

4. To accept the recommendation of the Committee that a questionnaire be sent to the membership requesting comments on their experience with Medicaid. On the basis of replies to such a questionnaire, problem areas in the handling of Medicaid patients and payments would be identified.

AMA's Committee on Private Practice: The Executive Board had reviewed material distributed earlier by Dr. Camalier which outlined the proposed functions of the Committee on Private Practice and "Definitions of Private Practice and Semi-private Practice." Dr. Camalier stated that this material was distributed to the Board for information only and that no action was expected.

Committee on Constitution and By-laws: A motion was made and carried to accept proposed Amendment VII to the Constitution and By-laws which amends Chapter II of the By-laws so as to

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provide for membership for medical students. The changes are as follows:

Article I. The members of the Society shall be of 7 classes, Active, Life, Special, Associate, Honorary, Intern-Resident and Student.

(No change in Articles II–VII.)

Article VIII. Student membership shall be limited to full-time students in good standing at one of the accredited medical schools in the District of Columbia. Such members shall have the privilege of attending all scientific sessions of the Society and shall receive its newsletter and notices of its scientific meetings. They shall not hold office. Three members designated by their Council may attend the business meetings of the Society, may participate in the discussion but may not vote. One student member may be appointed to each of the Society's committees except those designated by the Executive Board as "housekeeping" committees. Such committee members shall have the right of discussion and may vote.

Article VII becomes Article IX without any change.

Chapter IV is amended as follows:

Article I. Add Section 6. Student members shall pay dues of two dollars ($2.00) annually.

Committee on Blood Banks: The Board accepted the recommendation of the Committee on Blood Banks that the Medical Society support the Washington Regional Red Cross Blood Center on increased hospital participation charges effective July 1, 1970. This does not apply to blood itself but to the increased cost of collecting, processing and delivery of red blood cells, whole blood, blood components and derivatives.

Other Business

1. The Board approved the recommendation of the Health Facilities Planning Council that the Medical Council of the Washington Metropolitan Area serve it in an advisory capacity.
2. The Board voted to accept the recommendation of the Committee on Ruffin and Other Bequest Funds that a member in financial distress receive assistance from the Executive Director in applying for aid through established procedures.

There being no further business, the meeting was adjourned at 9:15 p.m.

MEETINGS

The Department of Medicine of the U. S. Naval Hospital, Bethesda, Md. is conducting a short course in general internal medicine entitled **"Current Concepts in Medicine"** to be held on September 17 and 18, 1970. The course, similar to the one held last year, will be a series of short presentations and panel discussions on topics of current interest. Registration is free. The course is open to all interested military and civilian physicians.

GENERAL NEWS

The District of Columbia Department of Public Health has been **renamed the Health Services Administration** in the D. C. Department of Human Resources.

The Association of American Medical Colleges has developed a **centralized application service** for applicants to medical schools and undergraduate schools alike. The program has been named the American Medical College Application Service (AMCAS).

During 1969–70, 56 medical schools are participating in AMCAS. This means that all students applying for classes entering in September 1971 to these schools will process their applications through AMCAS. Georgetown University School of Medicine is one of the participating schools. Individuals applying to medical schools not participating in AMCAS must contact those schools directly for application instructions.

The applicant needs to submit only 1 application and 1 set of official transcripts to AMCAS regardless of the number of schools to which he is applying. The completed application form and transcripts are then reproduced and distributed to each of the participating medical schools designated by the applicant. A service fee will be charged according to the number of medical schools to which the applicant wishes to apply, i.e., for 1, $10.00; for 2 schools, $15.00, etc.

After the AMCAS application has been submitted, each medical school will notify the applicant directly of additional items necessary or of an admission decision. AMCAS will function solely as an application service. Further information may be secured by contacting AMCAS, c/o Association of American Medical Colleges, Suite 200, One Dupont Circle, N.W., Washington, D. C. 20036.

The second edition of **"Current Procedural Terminology"** is available from the American Medical Association, 535 North Dearborn Street, Chicago, Ill. 60610. This paperback can aid the physician in settling claims for compensation through insurance companies or Medicare-Medicaid. It is a uniform system of terminology which provides him with a way to describe accurately and succinctly any diagnostic or therapeutic procedures he has performed.

The concepts and goal of the book have evolved from surveys and discussions by the AMA Committee on Health Care Financing. The book sells for $2.00, with payment to accompany the order.

Rear Admiral Walter Welham, MC, USN (Ret.) has been named **Executive Director of the Association of Military Surgeons of the United States.** He succeeds Brig. General Frank E. Wilson, MC, USA (Ret.), who retired as Executive Director in the spring after serving in that office for 7 years. Admiral Welham has had a long and distinguished career in the Medical Corps of the U.S. Navy, specializing in submarine medicine.

Dr. Roscoe C. Young, Jr. was elected President of the **D.C. Thoracic Society** at its 68th Annual Meeting at the National Press Club in May. Dr. Young is Director of the Pulmonary Function Laboratory at Freedmen's Hospital. Dr. P. Gregg Rhodes, Chief of the Pulmonary Division, Georgetown University Hospital, was elected President-elect. Other officers elected were:

Dr. Bernard Grand, *Vice President*; Dr. Edward S. Mehlman, *Secretary-Treasurer*; and Dr. Harold M. Silver, *Representative Councilor* to the American Thoracic Society.

Elected to the Executive Committee were Dr. Robert F. Donohoe, Colonel Alan R. Hopeman, MC, USA, Dr. Maurice A. Sislen, and Dr. Robert G. Loudon.

Major General Alonzo A. Towner, USAF, MC, was nominated by President Nixon to the Senate for appointment as **Surgeon General of the Air Force,** effective May 1. General Towner succeeds Lt. General Kenneth E. Pletcher, who retired on April 30.

General Towner received his medical degree from the University of Kansas in 1935. He entered military service in February, 1940. Following various assignments, he was transferred in 1944 to the Office of the Air Surgeon, where he served in the Operations Division until reassigned in 1945 to the Surgeon's Office, Headquarters USASTAF, Guam. In May 1949 he was reassigned to the Office of the Air Surgeon in Washington, D.C. for duty in the Care of Flyer Branch. When the Air Force Medical Service was established in 1949, he became Chief of the Aviation Medicine Division.

MAJOR GENERAL ALONZO A. TOWNER,

Surgeon General of the Air Force

During the 50's and 60's he held a number of top assignments as Air Surgeon in this country and abroad.

Major General Thomas H. Crouch, USAF, MC, was appointed Deputy Surgeon General, effective May 1, succeeding General Towner. General Crouch, who had been serving as Director of Professional Services in the Office of the Surgeon General, was succeeded by **Colonel Gerrit L. Hekhuis, USAF, MC.**

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Medical alumni of George Washington University held their banquet at the Shoreham Hotel, May 30, and the occasion, as usual, was a festive one.

Alumni Service Awards were presented to Dr. Alec Horwitz, surgeon, and to Miss Catherine Breen, Assistant to Dean Parks of the School of Medicine.

Dr. Horwitz, who was cited for "outstanding achievements and meritorious service," has served for 18 years as Chief of the George Washington Surgical Service at D. C. General Hospital and has had an extensive private practice in Washington. A founder of the Washington Academy of Surgeons, of which he is Past President, he is also Past President of the Jacobi Medical Society and a member of many professional organizations.

Miss Breen was cited for her "exceptional interest and meritorious service to the Association, to the George Washington University and to the community." Dr. Donald H. Glew, Chairman of the Awards Committee, stated that she has been a "sister, mother, devoted friend, staunch supporter and confidant" to 2 generations of medical students.

Dr. Edward J. Kowalewski, of Akron, Pa., President of the American Academy of General Practice and a member of the Class of 1945, received the Alumni Achievement Award.

The Alumni Association's new President, Dr. Jerome W. Canter, presented 4 professors with University Chairs. Dr. Janet Travell, known as the physician who prescribed a rocking chair for President Kennedy, was one of them and her chair has a rocker attached. Other chairs went to emeriti faculty, Dr. Hayden Kirby-Smith, Associate Clinical Professor of Dermatology; Dr. Herbert Pollack, Clinical Professor of Medicine; and Dr. James W. Watts, Professor of Neurological Surgery.

Dr. Judson G. Randolph, Professor of Pediatric Surgery, was chosen to address the Class of 1970 at the Commencement Exercises, May 31, in Lisner Auditorium. Dr. Travell, who has served as Associate Clinical Professor of Medicine, received emeritus status at that time.

Five women and 94 men comprised the 1970 graduates. Dr. Patrick J. Sullivan, who led the Class, received the John Ordronaut Prize awarded annually to the member of the class with the highest scholastic standing.

Many members of the D. C. Medical Society have provided funds for special prizes and awards. The Samuel M. and Miriam S. Dodek Prize for "commendable knowledge and understanding of the field of female endocrinology" went to Dr. Paul D. Miller, who also received the Oscar Benwood Hunter Prize in pathology. The Huron W. Lawson Prize in obstetrics and gynecology went to Dr. Eric M. Wagshal and the Benjamin Manchester Prize, for an outstanding record and promise of real humanitarinism in the practice of medicine, to Dr. Samuel J. Scott.

The D. C. Chapter of the American Association of Medical Assistants held an all-day symposium on "Alcoholism and Drug Addiction," April 18, at the Marriott Key Bridge Motel. Following the program the newly elected officers were installed, with Mrs. Suzanne Early, Past President, as the installing officer. The new officers are:

President: Miss Judy E. Shipe (Dr. John M. Keshishian)
Vice President: Miss Alice D. Furlong (Dr. Frank J. Sanzaro)
President-elect: Miss Dorma V. Schnurr (Drs. Peabody, Lyons, de Guzman and Seremetis)
Secretary: Mrs. Cynthia Martin (Jefferson Memorial Hospital)
Treasurer: Mrs. Marian K. Green (Dr. Andrew G. Prandoni)

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Advisors to the chapter are Drs. Ray N. Brown, William S. Lyons, Harold M. Silver, and Mr. Thomas Sadler, Executive Director of the D. C. Medical Society.

The Institute for Biomedical Research, which has been operated by the AMA-ERF at the headquarters of the American Medical Association in Chicago since 1965, will be terminated on July 31. This was in accord with a decision made in December 1969 by the AMA's House of Delegates.

PERSONALS

Dr. William P. Herbst received the highest honor given to a urologist at the Annual Banquet of the American Urological Association in Philadelphia, May 13. He was presented the Ramon Guiteras Medal, named for Dr. Guiteras, a Founding Fellow of the AUA. The award also included an honorarium of $5,000. The presentation was made by Dr. William Valk, Professor of Urology at the University of Kansas and a Past President of AUA.

Dr. Josephine E. Renshaw has been reappointed to the Board of Trustees of Group Hospitalization, Inc. by the Medical Society of the District of Columbia and will serve for a 5-year term. Currently she is Secretary of GHI.

Dr. John P. Nasou has submitted his resignation, effective July 31, as Medical Director of D. C. General Hospital, a post he has held for 6 years. A specialist in internal medicine, he will open an office for private practice in Silver Spring, Md.

Dr. Nasou graduated from George Washington University School of Medicine in 1952, and in 1954 he began a residency in the George Washington Service at D. C. General Hospital. Two years of active duty in the U.S. Naval Reserve interrupted his residency which he completed in 1958. In that year he joined the U. S. Public Health Service and was assigned to the National Institute of Allergy and Infectious Diseases in Bethesda, Md. He returned to D. C. General Hospital in 1961 as Chief Medical Officer, Outpatient Division, and became Medical Director of the Hospital in 1964. Dr. Nasou is an Associate member of the D. C. Medical Society.

OBITUARIES

Howard Thomas Karsner, M.D.

(1879–1970)

Dr. Howard T. Karsner, internationally known pathologist, died, April 8, 1970, at his home, 3133 Connecticut Avenue, N.W.

Born in Philadelphia, January 6, 1879, Dr. Karsner received his Bachelor's degree in Science from the Philadelphia School of Pedagogy in 1899 and his medical degree from the University of Pennsylvania in 1903. He interned for 2 years at the Philadelphia General Hospital and spent another year as resident physician at the Philadelphia Hospital for Contagious Diseases. During his long career in pathology he studied at various times in Vienna, Berlin and London.

In 1911 Dr. Karsner was named Assistant Professor of Pathology at Harvard Medical School, and in 1914 became Professor of Pathology at what now is Case-Western Reserve University, where he organized the University's Institute of Pathology.

In addition to his teaching, Dr. Karsner did research in cardiovascular disease and was a leader in studying the pathogenesis of arteriosclerosis.

He was chairman of the National Research Council's pathology committee for many years and was influential in establishing the Armed Forces Institute of Pathology, as well as promoting and guiding many of its activities.

During World War I he was commissioned Captain in the Army Medical Corps and served with Cleveland's Lakeside Unit in France. During World War II he was special consultant to the Secretary of War for the Army Air Corps and in 1949 was consultant to the Surgeon General of the Army and to Army hospitals in Europe. He became research advisor to the Navy in 1949 after retiring from Western Reserve.

The Navy honored Dr. Karsner in 1961 with the presentation of the Captain Robert Dexter Conrad Award for his contributions to research programs in submarine and aviation medicine and for the establishment of clinical research facilities in the United States and overseas. In 1952 the American Association of Pathologists and Bacteriologists, which he served as President from 1918 to 1949, except for 2 years, awarded him its highest honor, the gold-headed cane.

Dr. Karsner had written many articles in the field of pathology but is probably best known for his "Textbook of Pathology," which was first published in 1926 and appeared in 8 editions over 30 years.

Elected to Associate membership in the Medical Society of the District of Columbia in 1951, he was named an Honorary member in 1968. He was a diplomate of the American Board of Pathology and a member and past president of many scientific organizations, including the National Board of Medical Examiners.

Dr. Karsner leaves his wife, Mrs. Jessie Spencer Beach Karsner, of the home address.

William Shambough Detwiler, M.D.

(1903–1970)

Dr. William S. Detwiler, who had practiced medicine in the Washington area for almost 40 years, died, May 16, 1970 at the Washington Hospital Center. He lived at 4737 Fulton Street, N.W.

The son of a physician, Dr. Detwiler was born in Herndon, Virginia, July 11, 1903. He received his medical degree from George Washington University in 1930 and interned the following year at Garfield Memorial Hospital. From 1930 to 1935 he served as First Lieutenant in the Army Medical Reserve.

Dr. Detwiler's offices were located on 16th Street for many years but more recently at 1025 Connecticut Avenue. He was on the active staff of the Washington Hospital Center and on the courtesy staffs of George Washington, Doctors, Georgetown and Sibley hospitals.

He was an Active member of the Medical Society of the District of Columbia from 1938 to 1950 and since 1962. He was a member of the George Washington University Medical Alumni Association.

He leaves his wife, Mrs. Hilda Smith Detwiler; 2 daughters, Mrs. Dawn Palmer, of Chicago, and Mrs. Diane Lynn, of London; a son, Lieutenant David A. Detwiler, USA, stationed at Fort Myer, Va.; and a brother, Alvin C. Detwiler, of Stowe, Vt.

Platelet Kinetics in Splenomegaly—Dillon et al

(*Continued from page 368*)

megaly caused by a lymphoproliferative malignancy. In patients with splenomegaly there was a diminished recovery of labeled platelets in the blood 2 hours after infusion but a nearly normal rate of disappearance of these circulating platelets from the blood. Two patients with an uninvolved bone marrow had normal platelet counts, and their platelet production was increased 2-fold. Thrombocytopenia occurred in patients with neoplastic infiltration of their bone marrow because they were unable to increase platelet production. In these patients measurement of organ radioactivity showed more radiochromium in the spleen. ^{51}Cr platelet kinetic studies are a valuable method for detecting hypersplenism in patients with either a normal or decreased platelet count whether or not there is evidence of leukopenia or hemolysis. Other investigators have provided data which indicate that platelet kinetic alterations in patients with splenomegaly are caused primarily by splenic pooling of platelets. Our findings were consistent with this hypothesis.

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August 9–14: International Symposium on Plastic and Reconstructive Surgery of the Face and Neck. Walforf-Astoria Hotel, New York. Address: Dr. John Conley, Executive Chairman, 139 East 36th Street, New York, N.Y. 10016.

August 12–15: Fourth World Conference on General Practice. Palmer House, Chicago. Address: Mr. Mac F. Cahal, Executive Director, Volker Blvd. at Brookside, Kansas City, Mo. 64112.

August 18–21: Second World Meeting on Medical Law. Statler Hilton Hotel, Washington. Address: R. Dierkens, Dr. Jur., General Secretariat, Apotheekstraat 5, B-9000, Ghent, Belgium.

September 6–12: Second International Congress of Parasitologists. Mayflower Hotel, Washington. Address: Dr. Aurel O. Foster, Director, Beltsville Parasitological Laboratory, U.S. Department of Agriculture, Beltsville, Md. 20705.

September 9–11: 1970 Scientific Assembly of the Medical Society of the District of Columbia. Washington Hilton Hotel, Washington. Address: Mr. Thomas Sadler, Executive Director, 2007 Eye Street, N.W., Washington, D.C. 20006.

September 10–12: American Association of Obstetricians and Gynecologists. The Homestead, Hot Springs, Va. Address: Dr. Charles A. Hunter, Jr., Secretary, Indiana University Medical Center, 1100 West Michigan Street, Indianapolis, Ind. 46202.

September 11–19: College of American Pathologists. Marriott Motor Hotel, Atlanta, Ga. Address: Mr. Oliver J. Neibel, Jr., Executive Director, 230 North Michigan Ave., Chicago, Ill. 60601.

September 14–20: American Electroencephalographic Society. Shoreham Hotel, Washington. Address: Dr. Philip T. White, Secretary, Department of Neurology, Marquette University School of Medicine, Milwaukee, Wisc. 53226.

September 19–20: National Congress on Medical Ethics. Ambassador West Hotel, Chicago. Address: Medical Ethics Department, American Medical Association, 535 North Dearborn Street, Chicago, Ill. 60610.

September 25–October 1: American Academy of General Practice. San Francisco. Address: Mr. Mac F. Cahal, Executive Director, Volker Blvd. at Brookside, Kansas City, Mo. 64112.

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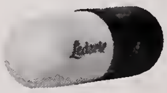

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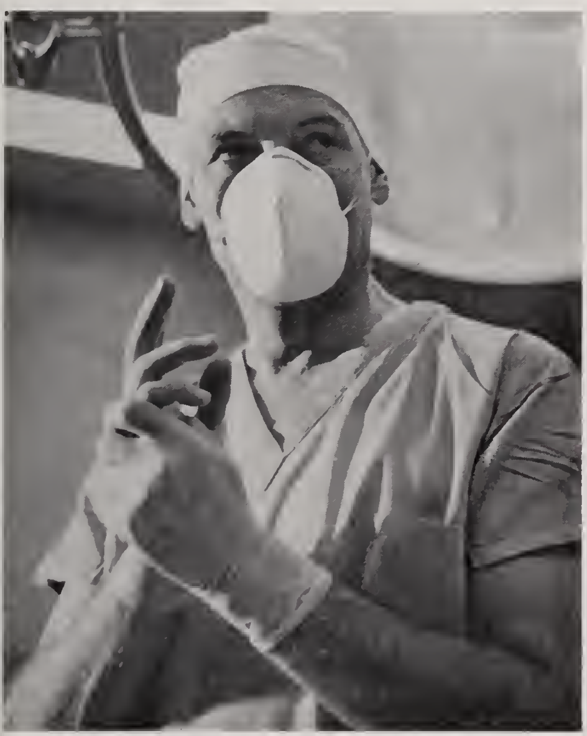

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Precautions: In the elderly and debilitated, and in children over six, limit to smallest effective dosage (initially 10 mg or less per day) to preclude ataxia or oversedation, increasing gradually as needed and tolerated. Not recommended in children under six. Though generally not recommended, if combination therapy with other psychotropics seems indicated, carefully consider individual pharmacologic effects, particularly in use of potentiating drugs such as MAO inhibitors and phenothiazines. Observe usual precautions in presence of impaired renal or hepatic function. Paradoxical reactions (e.g., excitement, stimulation and acute rage) have been reported in psychiatric patients and hyperactive aggressive children. Employ usual precautions in treatment of anxiety states with evidence of impending depression; suicidal tendencies may be present and protective measures necessary. Variable effects on blood coagulation have been reporte very rarely in patients receiving the drug and oral anticoagulants; causal relationship has not been established clinically.

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MEDICAL ANNALS of the District of Columbia

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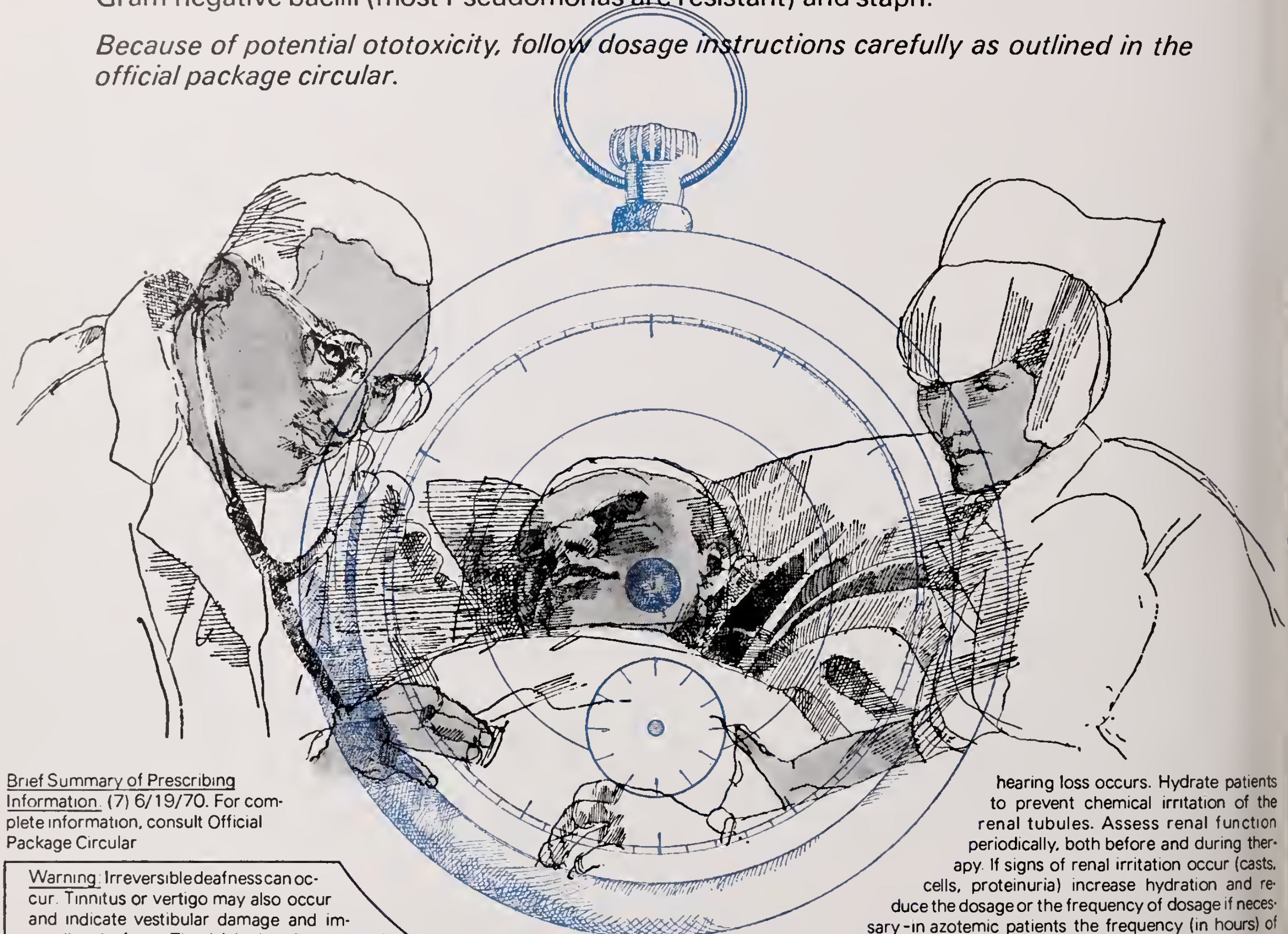

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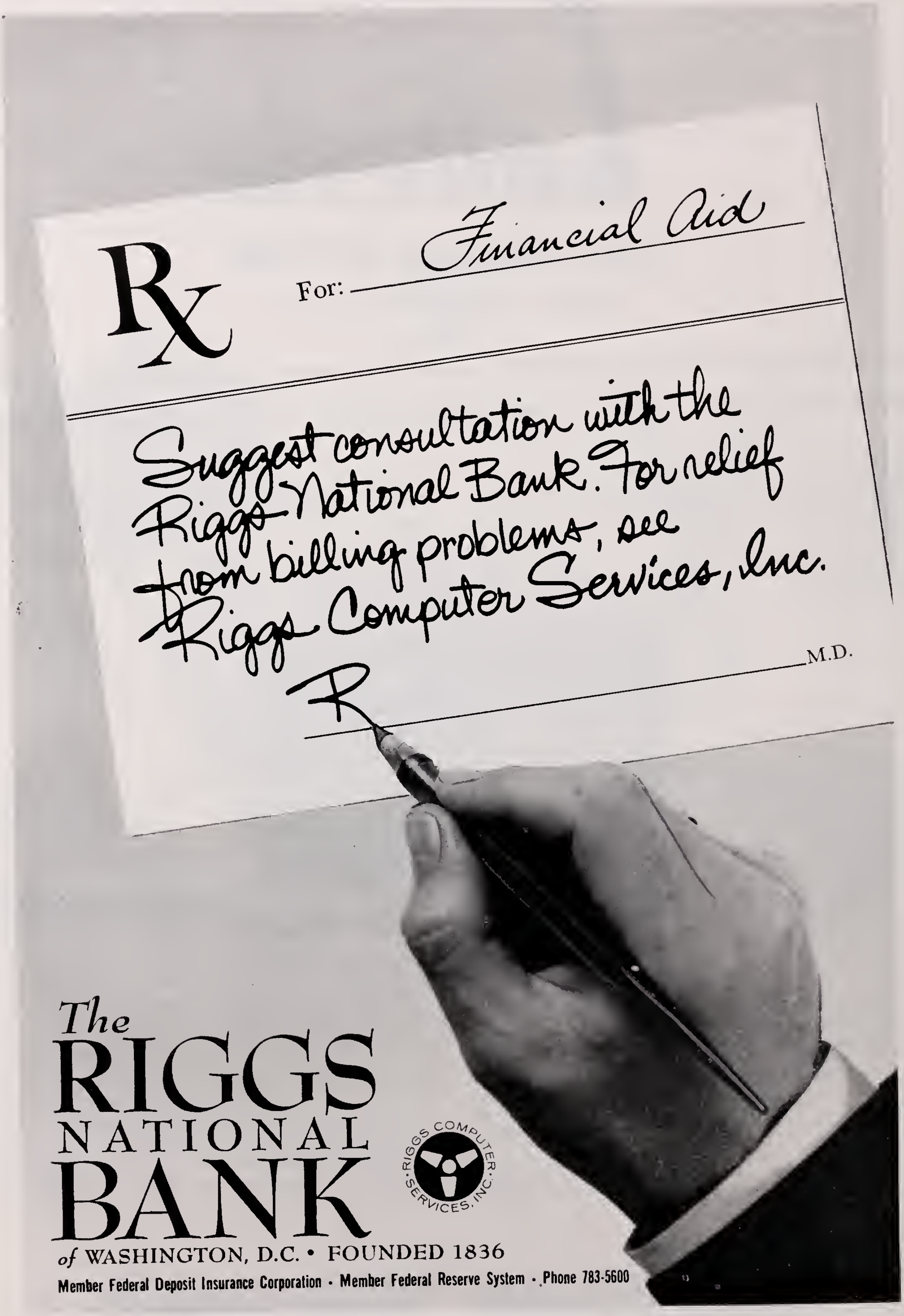
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Yearly Subscription, $8.00
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Second-class postage paid at Baltimore, Md.
Published monthly at
Mount Royal and Guilford Avenues,
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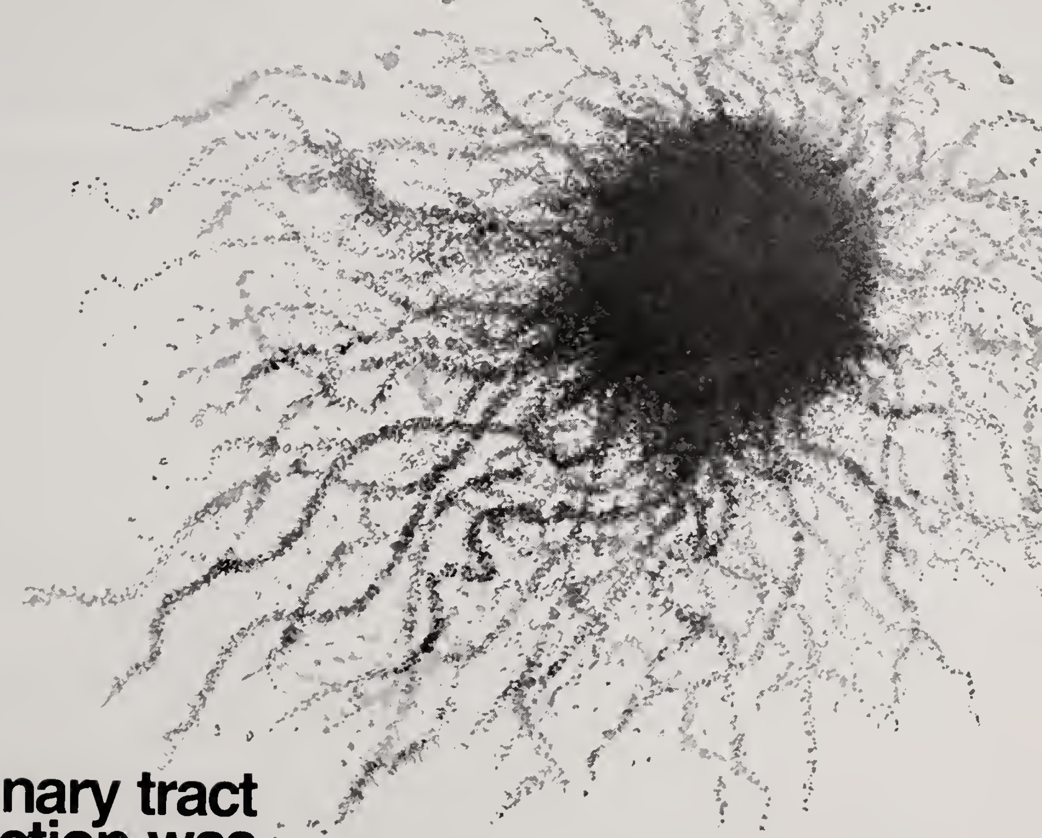

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Warning In renal impairment, usual doses may lead to excessive accumulation and liver toxicity Under such conditions, lower than usual doses are indicated and, if therapy is prolonged, serum level determinations may be advisable. A photodynamic reaction to natural or artificial sunlight has been observed Small amounts of drug and short exposure may produce an exaggerated sunburn reaction which may range from erythema to severe skin manifestations. In a smaller proportion, photoallergic reactions have been reported Patients should avoid direct exposure to sunlight and discontinue drug at the first evidence of skin discomfort Necessary subsequent courses of treatment with tetracyclines should be carefully observed

Precautions Overgrowth of nonsusceptible organisms may occur Constant observation is essential If new infections appear, appropriate measures should be taken In infants, increased intracranial pressure with bulging fontanels has been observed. All signs and symptoms have disappeared rapidly upon cessation of treatment.

Side Effects Gastrointestinal system—anorexia, nausea, vomiting, diarrhea, stomatitis, glossitis, enterocolitis, pruritus ani. Skin—maculopapular and erythematous rashes, a rare case of exfoliative dermatitis has been reported. Photosensitivity, onycholysis and discoloration of the nails (rare) Kidney—rise in BUN, apparently dose-related Transient, reversible, nephrogenic diabetes insipidus with excessive thirst and polyuria (rare) Hypersensitivity reactions—urticaria, angioneurotic edema, anaphylaxis Teeth—dental staining (yellow-brown) in children of mothers given this drug during the latter half of pregnancy and in children given the drug during the neonatal period, infancy and early childhood Enamel hypoplasia has been seen in a few children If adverse reaction or idiosyncrasy occurs, discontinue medication and institute appropriate therapy Demethylchlortetracycline may form a stable calcium complex in any bone-forming tissue with no serious harmful effects reported thus far in humans.

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2007 Eye Street, N.W. Washington, D.C. 20006

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August 1970

VOLUME XXXIX • NUMBER 8

A Review of the Use of Prosthetic Materials in Tendon Surgery*

NOEL B. ROGERS, M.D.†

Before reviewing the history of attempts to repair or replace the flexor tendons of the hand it is first essential to understand the structure of the tendon and its investments and the reason why repair can be so difficult. Tendons that pull in a straight line are free, while those pulling around a corner are either in a sheath or controlled by pulleys. Those that are pulling in a straight line, and hence are "free," are surrounded by the paratenon, a specialized form of connective tissue that fills in the spaces surrounding the tendon and which is attached to it. The paratenon contains elastic fibers which are coiled when the tendon is in a resting state and are pulled straight when the tendon moves so that it does not actually glide freely but rather drags connective tissue with it. In the sheath the tendon is in a double layer of synovia, one on the tendon and the other inside the sheath, and the 2 are continuous at the ends by an imbrication of the 2 layers, as well as the mesotenon on the longitudinal convex side which carries the vascular supply to the tendon and is loose enough to allow its free motion.

Free ends of a cut tendon will have a great deal of reaction, and any free end will "reach out" for a structure to which it may attach. In extensor tendons the reaction may occasionally be so vigorous that the ends will meet and function return with no surgical intervention. In the presence of surgical repair, healing in the paratenon will proceed as described provided the ends of the tendon are well approximated. Within the sheath this is not the case. Tendon healing is due primarily to the connective tissues that surround the tendon[1] so that as the union of tendon ends occurs there is also formation of connections with the surrounding sheath which, unlike the paratenon, is rigid, holding the tendon in the grip of dense immobilizing adhesions. It is the avoidance of this problem which brings us to the topic under discussion: How can one get an adequate repair of the flexor tendons of the hand within the tendon sheath?

The problem has been approached in 3 ways: (1) the use of blocking devices to separate the tendon suture line from surrounding tissues, (2) the formation of tendon pseudosheaths into which a free tendon graft could be placed, and (3) the use of artificial tendons to replace the damaged tendon.[2] The first 2 methods have many similarities and a history that covers the same period of time so that to separate them would only be confusing. I shall first address myself to both of these subjects simultaneously and then turn to the third solution which is of much more recent vintage.

As early as 1914, in an effort to transfer tendons to replace the function of paralyzed muscles, attempts at forming a new sheath with a smooth surface were made and consistently met with failure.[3] The early solution to the problem of adhesions was the introduction of the free tendon graft, taking the suture line both proximally and distally (the last ½ inch) out of the tendon sheath.

This method is still widely in use today, with successful results in many cases, and is often still the primary choice of treatment. However, there are a large number of cases in which the free graft has likewise become adherent, or due to the massive trauma of the initial injury or infection the scar formed is so dense that the sheath is obliterated, and it is recognized that any attempt at placing a free tendon graft through the area is doomed to failure. It is this latter situation to which most of our attention will be directed.

Many advocated amputation of the digit or fusion of the DIP joint for laceration of the profundus rather than to attempt repair.[4]

Numerous materials have been tried in an effort to regenerate the tendon sheath to provide an acceptable bed for free tendon grafts in which adhesions will not form (table 1).

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* The author received Third Award for this paper in the 1969 Annual Essay Contest sponsored by the Washington Academy of Surgery for resident staff members of hospitals in the Washington Metropolitan Area.

† Second-year resident in Orthopedic Surgery, Washington Hospital Center, 110 Irving Street, N.W., Washington, D. C. 20010.

TABLE 1: Materials That Have Been Used to Regenerate Tendon Sheath*

Nonbiologic	Biologic
Vasalin and rolled silver tubes	Autologous, homologous, and heterologous
Latex rubber Celluloid tubes Cellophane	Autologous: fat fascia tunica vaginalis
Tantalum foil Nylon Tygon®	Homologous: cartilage vein both in formalin
Stainless steel foil Polyethylene Silicone	Heterologous: amniotic membrane allantoic membrane mucosa of cecum
	Also: Cargile membrane chromicized pig bladder fresh aortic graft freeze-dried aortic graft

* Only polyethylene tubing gave a reasonably good protection from adhesions but required double the time for healing.

The autografts above gave fairly good results but only with very early mobilization.

Most biologic materials have been a failure.

In 1936 experiments were carried out with the use of hollow tubes of chemically pure celluloid laid in the tendon bed with the proximal and distal ends of the tendon sutured inside the ends of the tube.[5] After 4 to 6 weeks these were removed and a free tendon graft drawn through the tunnel formed. This tunnel had the appearance of a normal tendon sheath and contained clear yellow fluid which had the appearance of normal synovial fluid. After 7 to 8 days of immobilization gradual motion was started, and although full function was slow to return, good results were reported. It is important to recognize that these patients most often required up to a full year to regain a satisfactory range of motion.

In the early attempts at sheath regeneration many biological materials were also experimented with, including human and bovine fibrin, fascia lata, tunica vaginalis and fat, the results being mixed in success (table 2).

Also reported was the use first of glass rods, which had the disadvantage of being fragile, and then stainless steel rods as a prosthetic material for the formation of a flexor tendon sheath.[6] The rod was left in place for 3 weeks before a free tendon graft was performed, and because of the rigid internal splint that it provided, no external splinting of the hand was done, although the forearm was placed in a cast with a protective mesh over the hand. Unfortunately, no follow-up is reported, and although results were claimed to be good the study was inconclusive.

With only limited success in restoration of the tendon sheath there was renewed interest in performing primary suture with the use of "blocking systems."

One of the interesting early attempts was to cover the ends of the tendon with a sheath of stainless steel (figure 1) which was removed after 5 weeks and the sheath left open. Although good results were claimed in 6 cases with a maximum follow-up of 15 months, this method did not gain any popularity.

TABLE 2: Comparison of Strength of Adhesions When Injured Tendon Is Protected by Various Materials

Material	No. Dogs	Average Grams to Separate		Per cent
		Experimental	Control	
Human fibrin film	12	867	4,195	21
Bovine fibrin film†	5	805	3,940	21
Cellophane	6	950	4,041	24
Autogenous fascia	11	2,638	4,422	60
Gelfoam®	5	2,160	3,470	62
Oxycel® cotton	6	3,912	4,458	88

† Bovine fibrin not recommended by the author at the time (1949) until more is known about its antigenic potential.

One of the most significant studies of "blocking systems" was performed in 1949 when the use of polyethylene tubes around the site of tendon suture was tried on an experimental basis. The flexor tendons of the dog's foreleg were all exposed and the fifth was transected and then sutured with the suture line protected by the polyethylene tube while the second was transected, resutured, and returned to its bed in the tendon sheath with no protection, as a control. The control tendons demonstrated full healing by 15 days although dense adhesions had formed. The experimental tendon showed no healing for 29 days, and full healing was not achieved until 45 days, from which time on the experimental tendon showed strength superior to the control (figure 2). Significant in this study was that the control tendons at 35 days were noted to have much more areolar adhesions which could be lysed with ease, while those removed at 15 days could not be accurately told apart from the sheath to which they were adherent. From this the author concluded that tenolysis is best delayed for 6 weeks in order to give a better chance of satisfactory results.

Studies by Skoog[1] in 1954 demonstrated that tendon healing is primarily from surrounding connective tissue and that material placed around the sutured ends of a tendon which cannot be penetrated by biological substances, that is, metal, polyethylene, etc., will significantly slow the healing process, thus explaining the findings in this experiment, although the reason was not clearly understood for 5 years.

Attention was next turned to the use of biologic materials, and, with the introduction of freeze-drying techniques, sections of artery were found to succeed where fresh graft material had failed.[7] This was particularly significant in that histologic sections demonstrated the complete replacement of the freeze-dried arterial graft by fibroblasts so that both grossly and microscopically an essentially normal tendon sheath could be established. It is important to note that this procedure is successful only with homograft material, and that heterografts are a failure.

It was though that the success of this technique rested on the ability of freeze-dried arterial graft to allow the passage of tissue fluid, protein, etc., while preventing the entrance of any adhesive bands. It was noted that if any small branches of the arterial trunk were not closed, or any splits in the graft occurred, there would be small filmy adhesions formed through these openings.

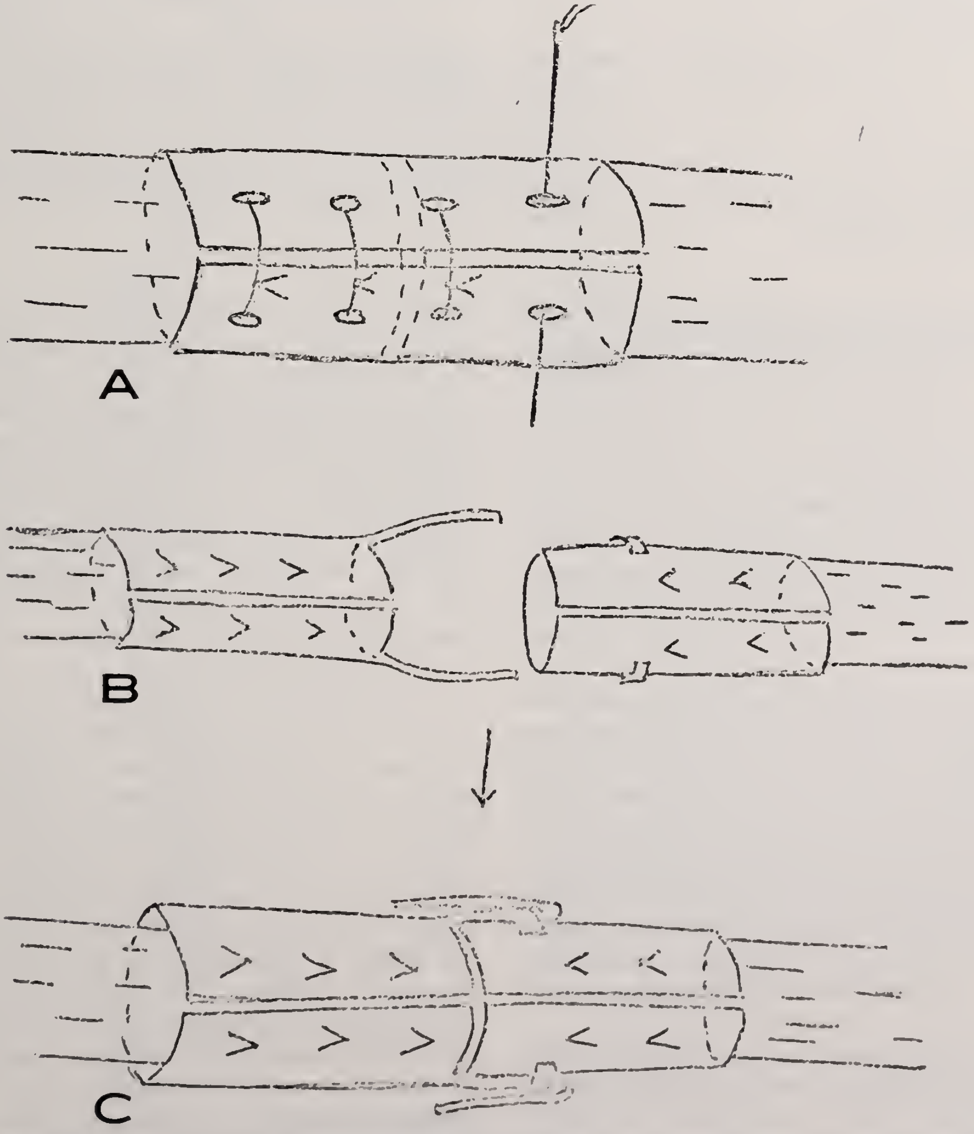

FIG. 1. A. Early single sleeve sutured to tendon ends. B and C. Ultimate form of early stainless steel tendon joiner.

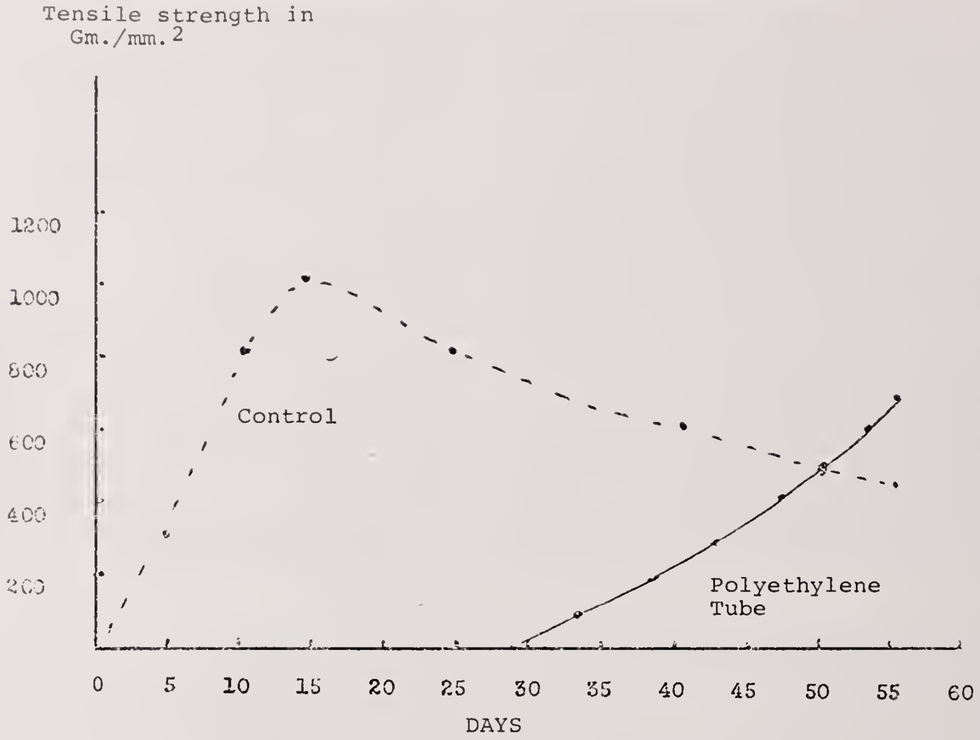

FIG. 2. Tensile strength of a tendon suture line protected by a polyethylene tube compared to a control.

More recently cellulose impregnated filter paper has been tried as a synthetic blocking agent, which will function in the same manner. It allows the entrance of tissue fluid, in the presence of which the peritenon appears to play a more active part in tendon repair and good union obtained.[8] The drawback of this technique is that the material is extremely friable and that any break in its mechanical integrity will allow the entrance of fibroblasts and the formation of adhesions. This method has been used with success in the human hand.

The most recent material that has been put to use is silicone, which has been used for both pseudosheath formation as well as protection of the suture line. Silicone rods have been used in the same way as the hollow celluloid tubes of 1936 to form a suitable bed into which a free tendon graft may be placed, although the experimenters in this field caution that these should be used only when a free tendon graft "would otherwise be doomed to failure due to the presence of scar."[9]

It appears at this time that the silicone rod may have succeeded where the celluloid tube failed. This material is soft and pliable, and after a satisfactory period of immobilization, usually about 4 weeks, passive motion is started with the prosthesis in place. By 12 to 16 weeks the patient should show a mature mesothelial-lined bursa, quality and power of the motor unit improved, softening of the moving planes of the hand, and maximum active range of motion. At approximately 4 months the prosthesis is removed and replaced by a free tendon graft or transfer. After the second procedure, immobilization is repeated for 4 weeks, and by 6 weeks from the time of the graft procedure the patient has usually achieved motion comparable to just prior to the second procedure.

Bader and Curtin[10] have made use of silicone underlays to separate the suture line in the tendon from the underlying sheath, and they believe that the results are so satisfactory that primary repair of lacerated flexor tendons in the sheath may now be a readily achieved possibility.

The concept of tendon graft or transfer in the face of a major injury is not the only solution to the repair of damaged flexor tendons that has been tried. Because of the problems already discussed, as well as the occurrence of some injuries in which damage is so extensive that multiple grafts are necessary and the availability of graft material becomes a problem, some have advocated the use of prosthetic material as a permanent replacement for injured tendon tissue.

One of the first attempts was the simple use of a double stranded nylon suture threaded through the tip of the distal phalynx, then passed back through the sheath of the injured tendon and sutured to the proximal end of the tendon at the level of the wrist after a polyethylene tube of narrow diameter had been placed over each suture for its entire length (figure 3). Using this method, Sarkin[4] claimed good results in 28 cases with 1 follow-up of 2 years. A similar method was tried with preconstructed tendon of nylon or wire in a polyethylene tube with multiple loops at the proximal end which were implanted into the belly of the muscle, but only a few animal experiments were performed, the method being entirely unsatisfactory because the loops tended to pull out of the muscle tissue with very little force even after time for adequate healing had been allowed.

Further studies in this direction centered on the use of pure "plastic" prosthesis. Williams[11] has described the use of a tendon replacement made of Teflon® with each end in the form of a "Y." The prosthesis is made of woven material which is then coated, the ends being left uncoated to allow for the ingrowth of tissue to give a firm union of tendon and synthetic. The achievement of a permanent union was found to be the great difficulty, and the early trials all led to failure due to disruption of the anastomosis. Of the 18 animals given Teflon replacements, 14 showed good results, the first 4 having disruption of the suture line prior to the development of a satisfactory technique of suturing. It was found that Teflon and Dacron® sutures were unsatisfactory, but mattress sutures of silk appeared to hold well. Follow-up for as long as 9 months showed good results (table 3).

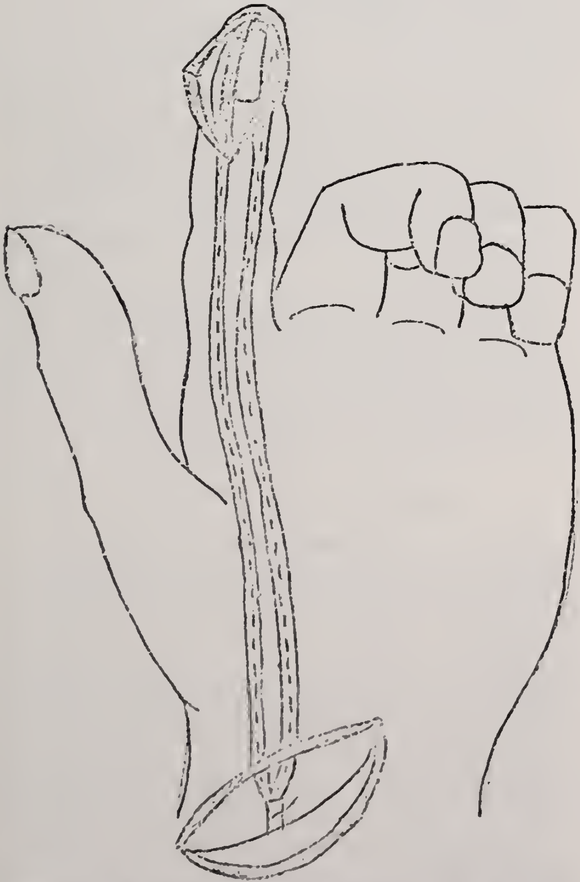

FIG. 3. Replacement of tendon by silk or nylon suture through distal phalynx with polyethylene sheath over each suture.

TABLE 3: Comparison of Teflon Prosthesis and Autograft (Control)

Result*	Strength	Gait	Electric Stimuli	Sheath
Excellent:				
Teflon	19	12	10†	12
Control	6	0	0	0
Good:				
Teflon	—	4	5	9
Control	—	6	6	0
Poor:				
Teflon	3	6	2	1
Control	1	1	1	7

* Response to electric stimuli: excellent—toes extended, good—foot alone extended, poor—neither occurred.

† Five not tested.

The most recently utilized material for a synthetic tendon, as in the development of a new sheath, is silicone. The prosthesis is made of 4 layers of reinforced silicone sheeting bonded together with 2 lengths of suture material incorporated, coming out of the ends. Again the configuration is with a "Y" at each end which is covered by a polyester mesh on its surface. The incorporated suture material is sutured into the tendon with a Bunnell type of stitch, and the "Y" or mouth is closed with 4 simple sutures. These experiments are very recent, having been described only in September 1968, at which time replacement in 10 dogs had all been completed successfully. Implants in the human have been tried but too recently to present the results. Figure 4 illustrates the prosthesis.

As might be expected, in the case of both the Teflon and the silicone prosthesis tendon there is a mesothelial lining which forms, completely covering the prosthesis so that should the suture line fail at any time, a "pseudosheath" will be present for the insertion of a free tendon graft.

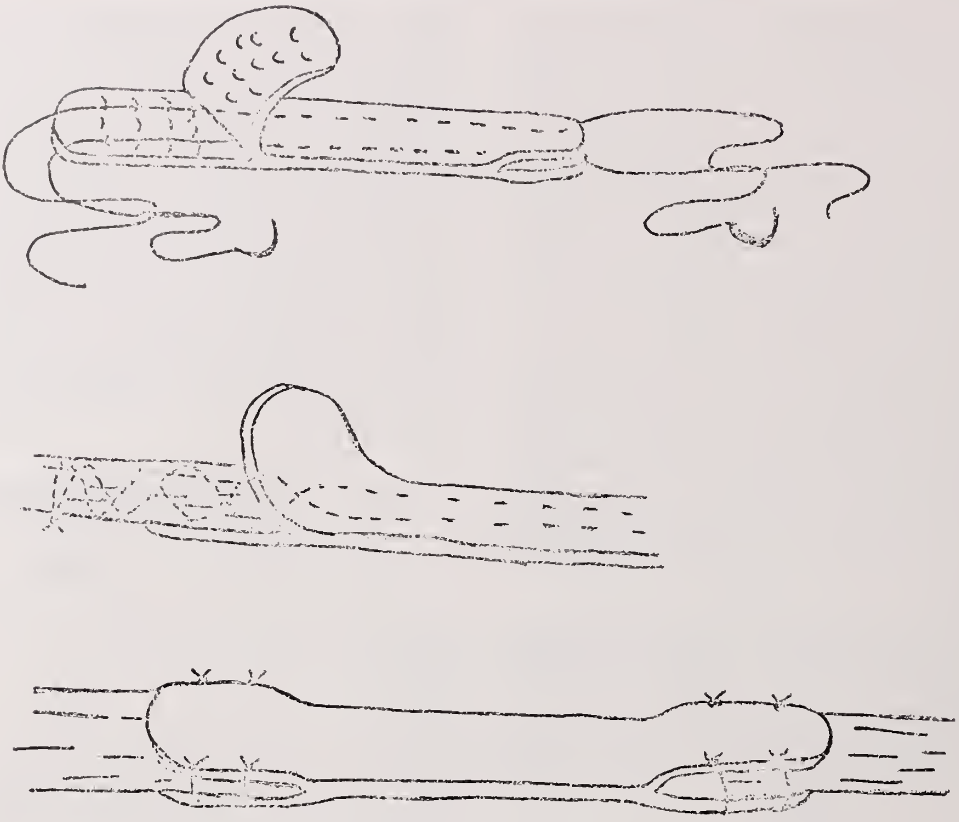

FIG. 4. The prosthesis.

Summary

The early problems encountered by those who attempted repair of flexor tendons injured in the tendon sheath have been reviewed. The difficulties are recognized as 2-fold, that of adhesions within the tendon sheath and the stiffness of the fingers themselves due to the required prolonged period of immobilization during the healing phase. The ultimate result of these difficulties was the introduction of prosthetic materials into tendon surgery.

The history of prosthetic materials in tendon surgery is one of many materials, a few successes, and a great many failures. The advent of modern plastics has led to the development of products which are both nonreactive in tissue and flexible enough for the wide range of motion that the hand possesses. Although all the problems are by no means solved, it appears that solutions may at last be drawing near.

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"Silent" Atresia of the Cervix

CHARLES T. GERBER, M.D.,* FRANK J. BEPKO, JR., M.D.,† AND
AARON H. GERBER, M.D., F.A.C.O.G.‡

THERE IS CONSIDERABLE AMBIGUITY in the current concept of cervical atresia. By definition atresia (*a* neg. + Gr. *trēsis* a hole + *-ia*) is absence or closure of a normal body orifice.[1] Stenosis (Gr. *stenōsis*) is a narrowing or stricture of a duct or canal.[2] In clinical practice, however, the difference between these terms is ill-defined and the application often interchangeable. Whether stenosis is but a stage in a progressive process leading to atresia is a moot point.

The causal relationship of many factors to stenosis and atresia of the cervical canal has been established. This is true in connection with trauma (surgical,[3, 4] radiation), atrophy of the menopause,[5] malignancy,[6, 7] and less so in cases of infection and hormonal imbalance. What remains in the realm of the hypothetical is the important consideration of the reason for the apparent selective susceptibility to these etiologic factors.

Since this lesion, depending on its extent, age of the patient, menstrual activity, and other variables, may remain asymptomatic and unrecognized,[8] we can only approximate its incidence.

We are presenting 20 case histories (table 1) in which some degree of narrowing of the cervical canal was present. We hope that some common factor in the symptoms may be found to help clarify the origin, prevention, or treatment of this condition.

Discussion

Narrowing of the cervical canal, as well as its external or internal os, is seen to range from slight stenosis to atresia (table 1). The canal may be blocked at various levels or for its entire length with or without stricture of either the internal or external os. One or both of the ostia may be completely agglutinated. Case 1 illustrates a situation in which patency of the external os masked complete occlusion of the internal os.

The cases presented range from 13 to 70 years of age at the time of detection. Forty-five per cent were between 35 and 50 years of age (table 2). The "time of detection" is misleading, however, since the condition may long be asymptomatic[8] and the diagnosis not established without probing for patency of the cervical canal. The condition may remain symptom-free except for mild dysmenorrhea, unless there is marked stenosis or atresia. The presence of symptoms in this series ranged from 3 weeks to 3 years before therapy was sought (table 3). Symptoms were then referable to menstruation (dysmenorrhea, amenorrhea, and menometrorrhagia) in 53 per cent of the cases. Abdominal pain accounted for only 26 per cent (table 4).

The etiology of the condition remains obscure. The influence of physiologic hormonal cyclicity cannot be denied,[5] but since this is nearly universal it would be expected that cervical atresia would be more frequent if this were an important causal relationship. More likely, however, the condition is acquired and may be more common than is realized.[3] As presented, surgical manipulation of the cervix preceded the onset of symptoms in 75 per cent of the cases (table 5).

The surgery included dilation, conization, punch biopsy, and cautery. The addition of curettage to these surgical procedures is associated with an increased incidence of subsequent stenosis, from 16 to 55 per cent (table 6). The protruding folds of cervical mucosa have been shown to be frequently traumatized during curettage.[5]

The degrees of stenosis following surgery have been related by various authors as stages in a progressive process ending in complete occlusion. Subsequently, the retention of secretions within

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TABLE 1: Summary of Data of Twenty Cases of Atresia of the Cervix

Case No.	Age	Gravida/Para	Previous Surgery	Degree of Occlusion	Pain	Physical Findings
1	33	5/3	D and C	Atresia	Abdominal pain	Hematometra; distended sealed internal os
2	36	8/5	D and C	Stenosis	Lower abdominal pain	Enlarged uterus
3	37	0	D and C	Atresia	None	Cervical canal closed at depth of 2.5 cm.
4	45		0	Stenosis	Abdominal pain	Obstruction of cervical canal at midlevel
5	70	0	0	Stenosis	None	Stricture of cervical os
6	55	7/6	0	Atresia	None	Cervical canal completely obstructed
7	20	0	0	Atresia	Pain in inguinal area	Hemotometra; blind uterine cornu
8	27	1/1	Cauterization of cervix	Stenosis	None	Stenosis of canal
9	27	1/1	Conization and D and C	Atresia	Abdominal cramps	Hematometra; cervical atresia
10	46	0	Cervical biopsy	Atresia	None	Cervical stenosis; pyometra
11	22	2/2	Conization	Atresia	Dysmenorrhea	Cervical stenosis
12	20	0	D and C; cauterization	Stenosis	None	Cervical stenosis
13	32	1/1	D and C; conization	Atresia	Dysmenorrhea	Complete atresia
14	39	3/3	D and C; cone biopsy	Stenosis	Backache	Distended uterus; cervical stenosis
15	54	1/1	D and C	Atresia	None	Distended uterus
16	39	1/1	None	Atresia	Abdominal pain	Pyometra; hematometra; distended uterus; cervical atresia
17	35	3/3	Conization	Stenosis	Dysmenorrhea	Enlarged uterus; stenosis
18	26	2/2	D and C; conization	Atresia	None	Hematometra; atresia
19	48	0	D and C; cone biopsy	Stenosis	Dysmenorrhea	Hematometra; stenosis
20	45	3/2; ab 1	D and C	Atresia	Amenorrhea	Atresia

TABLE 2: Relationship of Acquired Cervical Atresia to Age

Age (years)	No. Cases	Per cent
20–25	3	15
25–30	3	15
30–35	2	10
35–40	5	25
40–45		
45–50	4	20
50–55	2	10
55–60		
60–65		
65–70	1	5
Total	20	100

TABLE 3: Interval Between Antecedent Surgery and Diagnosis of Atresia
(Cases with no history of surgery deleted)

Time (months)	No. Cases	Per cent
1–3	4	26.67
3–6	4	26.67
6–9	1	6.60
9–12	3	20.00
Over 12	3	20.00
Total	15	100.00

TABLE 4: Relative Incidence of Symptoms in Acquired Cervical Stenosis

Symptoms	Incidence	Per cent
Abdominal pain	5	26.31
Dysmenorrhea	4	21.05
Backache	1	5.26
Amenorrhea	3	15.78
Menstrual irregularity	3	15.78

TABLE 5: Incidence of Previous Surgery in Acquired Cervical Atresia

Type of Surgery	No. Cases	Per cent
D and C	5	25
Cautery	1	5
Conization and D and C	5	25
Cervical biopsy and D and C	1	5
Cautery and D and C	1	5
Conization	2	10
No surgery	5	25
Total	20	100

TABLE 6: Incidence of Curettage as a Predisposing Factor in Atresia

Type of Surgery	No. Cases	Per cent
D and C only	5	27.78
Cervical surgery with D and C	10	55.55
Cervical surgery without D and C	3	16.67
Total	18	100.00

the endometrial cavity may gradually increase the size of the uterus and extend into the fallopian tubes and peritoneal cavity. Stasis in the presence of bacteria may promote the development of hematopyosalpinx, and spillage of menstrual secretion through the fimbriated ostia may lead to peritonitis.

The recognition of surgical manipulation as an important etiologic factor in cervical atresia may enable the surgeon to prevent either the condition or its progression.[4] In over 50 per cent of the cases there was a 6 months' delay in diagnosis (table 3). This delay might have been avoided by simple sounding of the cervix during routine postoperative examination.[3, 9] The sooner that a lack of probe patency is diagnosed, the sooner definitive therapy may be undertaken (case 7). It may eventually be regarded as a "surgical sin" not to assure patency of the cervical canal following surgery.[4]

The presence of cervical obstruction accompanied by hematometra has been thought to suggest malignancy or recurrence of an active malignant process.[10] Treatment with antibiotics should always be used in such cases in order to avoid infectious complications. Case 5 illustrates the accidental finding of malignancy by routine cervical probing.

Obstruction of the cervical canal may easily be recognized as a factor in fertility. As in case 13 the establishment of probe patency may be a simple, although perhaps infrequently used measure.

Summary and Conclusions

Twenty cases with narrowing of the cervical canal were encountered in a group of predominantly white middle-class patients. The extent of reduction in the caliber of the canal ranged from slight stenosis to complete atresia and involved all or part of the cervical canal. Surgical manipulations of the cervix preceded this lesion in 75 per cent of the cases.

Acquired cervical stenosis of varying degree is more common than is generally appreciated and the condition may remain symptom-free for some time.

Atresia as well as stenosis in the perimenopausal group may have a latent "silent" phase or be entirely free of symptoms.

The development of atresia is not necessarily related to the magnitude of antecedent surgery, nor can diagnostic reliance be based upon the severity of symptoms.

Acquired atresia is generally preventable. Prevention, diagnosis, and cure require probing of the cervical canal as a routine measure postoperatively and should be practiced early.

We appreciate receiving permission from the following physicians to include their cases: Dr. Garth L. Jarvis (case 3), Dr. M. S. Weingarten (case 4), and Dr. L. Donovan (case 6).

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(Continued on page 479)

Circumcision: Modified Circular Cuff Technique

LT. COLONEL GIULIO I. SCARZELLA, MC, USA*

CIRCUMCISION is generally performed by the ventral and dorsal incision technique with excision of the redundant prepuce. The circular cuff technique is also used when a circular incision is carried out around the penis at the level of the corona with the prepuce in normal position. The prepuce is then retracted and another circular incision carried out proximal to the corona. The 2 incisions are then connected by a third vertical one and the tube of prepuce removed by blunt and sharp dissection. My technique is a more expeditious modification of the circular cuff technique.

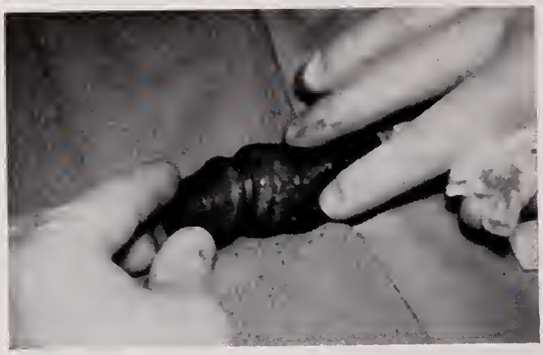

FIG. 2. Second circular incision proximal to corona.

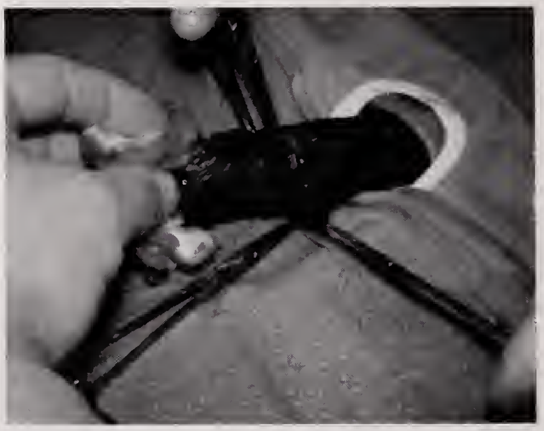

FIG. 3. Prepuce in normal position with hemostats applied.

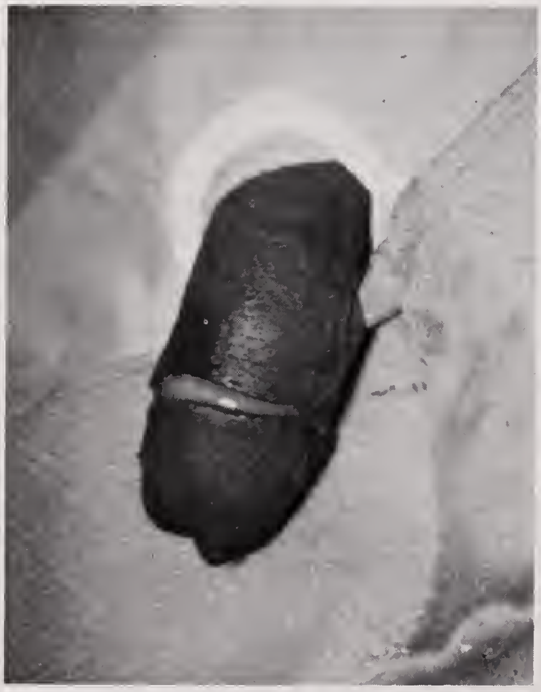

FIG. 1. Circular incision at level of corona.

A circular incision is carried out at the level of the corona with the prepuce in normal positon (figure 1). The prepuce is then retracted and another circular incision performed about 1 cm. proximal to the corona (figure 2). The prepuce is then again pulled down in normal position and straight hemostats applied at 3, 6, 9, and 12 o'clock on the distal edge of the first incision (figure 3). The assistant pulls distally on the hemostats, putting the prepuce on the stretch. Dissection is then carried out easily with the scalpel, everting the taut prepuce by separating the preputial skin from the areolar subcutaneous layer (figure 4). Once removal of the everted prepuce is practically completed, a finger can be introduced in it to facilitate defining the edges and complete removal (figures 5, 6, 7).

This technique has advantages over the circular cuff technique.

The circular incisions are carried out under constant control with the scalpel, producing a better cosmetic result than is obtained with the scissors in the dorsal and ventral incisions technique.

The blood vessels are dissected away from the preputial skin with fewer bleeders to tie.

The subcutaneous tissues between the 2 layers of preputial skin are retained. This allows better mobility of the mucocutaneous anastomosis.

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This technique is more expeditious.

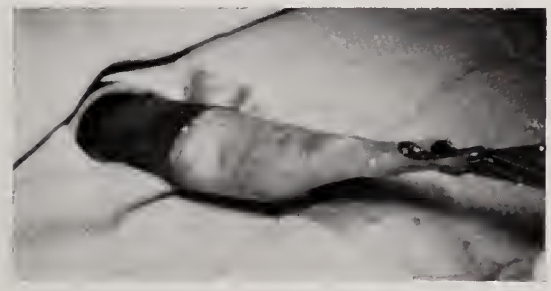

FIG. 4. Separating the preputial skin from areolar subcutaneous layer.

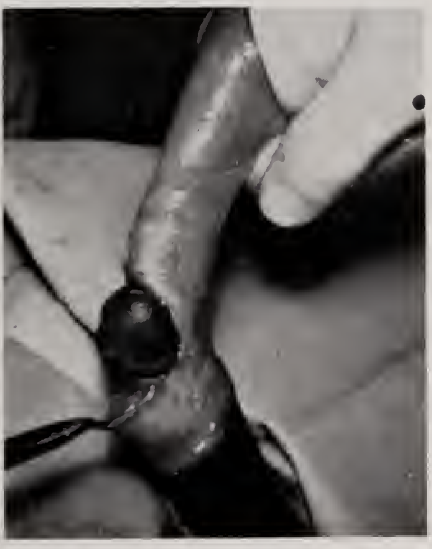

FIG. 5. Finger introduced to define edges before complete removal of prepuce.

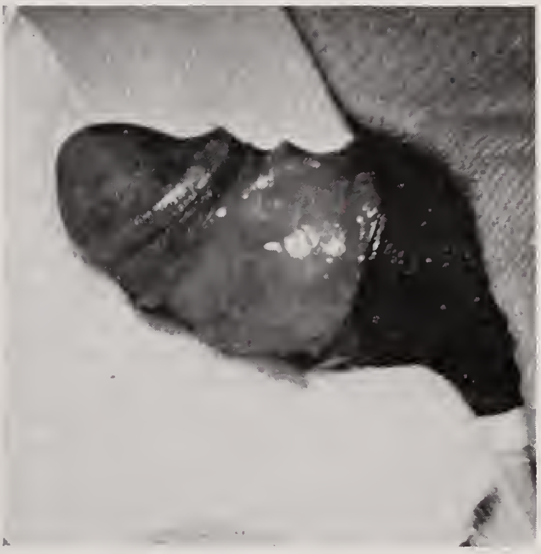

FIG. 6. Prepuce completely removed.

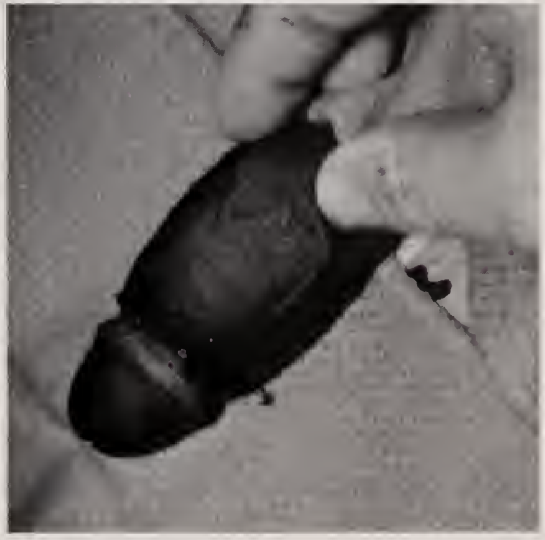

FIG. 7. Cosmetic result obtained by circular cuff technique.

Psychomimic Syndrome

ARMON ANTHONY CAIRO, M.D.*

OVER A PERIOD of some 15 years I have seen a number of patients whose illnesses resembled closely a definitive organic disorder but without confirming objective clinical findings or laboratory results. In many of these patients a careful history revealed existence in the past of the suspected illness in a close relative or friend, which prompted me to believe that the patient's illness constituted an unconscious mimicry. The attempt to ascribe these illnesses to the existing psychiatric diagnostic categories that include somatic-oriented disorders (psychophysiologic autonomic and visceral reactions; conversion reactions) seemed to leave much to be desired. Therefore, a new category seemed desirable, and for want of a better term the designation of psychomimic syndrome was decided upon.

It is defined as a syndrome consisting of varying symptom-complexes without organic cause or objective clinical findings that simulate or mimic the illness of an ambivalently related person.

The pathogenesis and differential diagnosis will clarify the definition more amply, but in order to orient this syndrome descriptively it was thought best to proceed next with a selection of some of the more classic case histories.

Report of Cases

Case 1. A 27-year-old white male watchmaker with a history of severe intermittent pain in the right knee of some 9 years' duration was evaluated in the diagnostic inpatient clinic of a university hospital. This thorough evaluation failed to reveal an organic cause or objective clinical findings and was a repetition of many previous studies that had been made at military and veterans' hospitals.

However, an exacting longitudinal life history revealed information that was either fascinatingly coincidental or coincidentally fascinating. In brief, this man had been stationed at a maximum security military area in Europe at the close of World War II, and on a rainy night while on guard duty he dozed. He was awakened suddenly by a noise, saw a figure in the dark, gave a challenge, received no response, and in sudden panic opened fire with an automatic weapon. Minutes later he discovered that he had partially amputated the right leg at the knee of his closest friend who was bringing coffee to him. A military inquest found him innocent and he was returned to duty. A month later on the evening of the day his friend was transferred to a rehabilitation center elsewhere in Europe the patient was again on guard duty. He dozed and awakened suddenly with bursting pain in his right knee. Thereafter followed a series of medical examinations, hospitalizations, and consultations with a resulting variety of presumptive diagnoses and treatments, all to no avail. In the intervening 9 years he functioned intermittently in leg casts, traction, on crutches or cane but was never free of pain or incapacity.

The patient revealed this with no apparent correlation or insight into his illness.

Case 2. A 46-year-old white male, who was vice president of an international corporation, developed severe chest pain, generalized muscle rigors, and hyperhidrosis while in the Far East. A provisional diagnosis of coronary heart disease manifested by angina pectoris was made despite negative clinical and laboratory findings. He was returned to America and was studied at 2 prominent medical centers where again the studies were negative but a presumptive diagnosis of angina pectoris made. Despite the use of vasodilators and graduated activity he became more and more incapacitated. He gave up golf and flying and was unable to function at work.

He was admitted to the diagnostic clinic where studies were again nonrevealing. Clinical therapeutic trial with vasodilators did not offer the usual response one sees with angina victims. A careful longitudinal history revealed that the initial chest pain had occurred on the first year's anniversary date of his mother's sudden and unexpected death. In addition, there was disclosure that his mother had been a narcotic addict for some years before her death and that one of her ways of obtaining narcotics had been through the complaint of "heart attacks." The patient stated that he had obtained several complete evaluations for her and had been repeatedly assured that she was in good health except for her addiction. He also had seen his mother have a number of withdrawal seizures manifested by severe muscle rigor and hyperhidrosis. He had purposely arranged to be the Far East representative of his company so that he would be free of this family turmoil which had been a source of great pain and humiliation to him. He had been overcome with guilt and grief when he received the telegram stating that his mother had collapsed suddenly on the street and died of a heart attack. It is not clear whether this diagnosis was substantiated by an autopsy.

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It was thought that this patient was suffering from a psychomimic syndrome and that not only his chest pain but the muscle rigors and severe hyperhidrosis as well were expressions of an unconscious identification with his mother's illness.

Case 3. A 28-year-old white female nurse was referred with a history of joint pain, fatigue, and self-described skin rash that had led both her physician and her to be concerned about disseminated lupus erythematosis.

All studies were negative including L.E. tests and serologic fixation tests. No objective findings of joint abnormality were found, and the skin rash related more to skin coloring than to a definitive morphologic change.

The onset of illness followed shortly the death of her father whom she had nursed during his terminal illness with cancer of the colon. It was only after inquiring closely about the details of the father's illness that she informed us that her father had developed disseminated lupus erythematosis during his terminal phase and that this had been the cause of death.

As strange as it may seem, this patient did not spontaneously connect the above revelation with her own illness. This same inappropriate unawareness is present in all the cases herein described.

Case 4. A 41-year-old white woman was admitted with a history of severe intermittent intercostal pain along the left eighth rib radiating from the spine to the anterior chest wall. She had been treated with analgesics, narcotics, nerve blocks, nerve separation, and finally chordotomy, without relief.

A complete evaluation failed to show objective findings. The patient's mother had developed herpes zoster in the same anatomic area on her forty-first birthday shortly after she and the patient, then aged 11, had left the patient's father following a series of explosive arguments over the discipline of the patient. The patient added tearfully that she felt she had been the cause of her parents' separation and divorce and that her mother had been very ill with the shingles for a prolonged period of time.

The patient did not relate the illness of her mother to her own complaints, depicting again the same type of unawareness seen in the previous case reports.

Case 5. A 23-year-old white woman with a year's history of "tearing" pain between her shoulder blades was seen in consultation because her most recent physician was puzzled by its cause and concerned over possible Demerol® addiction. A complete workup including a myelogram disclosed no positive findings. Nerve blocks and a chordotomy had failed to alleviate the pain.

The intern's history documented the fact that the patient's mother had died of a dissecting aortic aneurysm 2 years earlier, but there was no amplification of this aspect of the history. It took very little questioning to discover that the mother had suffered with a slow dissection of the aorta over a span of several years and had been treated with Demerol to relieve the pain. The patient, who had been in college, left to help her mother at home. There were indications that the mother, who had been hypertensive for years, was difficult to get along with, and the patient had been an object of her irritability over the years.

The date of the mother's death corresponded by a 1-year lapse with the onset of the patient's symptoms.

Case 6. A 31-year-old white woman was referred because of a 6 months' history of urinary frequency and swelling of her body. The examination was negative. A brother-in-law had died of nephrosis just before the patient's illness began. With great difficulty the patient disclosed that she had had an affair with him for some years before his death. She also stated that she felt his illness and death was a punishment imposed by God for his indiscretion and sin. She felt certain that her illness was a punishment, but when questioned further about this she decided that her illness too was organic and that it would eventually lead to her death.

Here we have a set of circumstances where there is partial insight in that the patient correlated her illness with that of an ambivalently-held person but yet could not suspect it was a mimicry.

The illnesses described consist of symbolic symptom-complexes as opposed to a physiologic origin. Anxiety is not relieved but depression is defended against. The Mosaic Code is involved, i.e., "an eye for an eye and a tooth for a tooth." Identification and incorporation mechanisms are utilized significantly.

There is often an anniversary relationship which corresponds with the date or age of death of the ambivalently-regarded object.

It would seem that the ambivalently-related object is identified with and that the illness of the object is incorporated and thereby mimicked, serving as a discharge for strong feelings of hostility, guilt, and loss which ward off severe depression.

Secondary gain if present would not appear to be obvious or dramatic.

These syndromes are to be distinguished from the organic illness being mimicked. The absence of objective clinical findings and laboratory studies helps. Response to therapeutic tests is negative or at best equivocal. A strong index of suspicion and a scrupulous history of the patient's life will reveal the presence of the illness being mimicked in someone of the patient's acquaintance. Further probing will disclose the degree of ambivalence that has to be present if the correlation is to stand.

Psychophysiologic autonomic and visceral reactions can be ruled out by the absence of objective clinical findings such as muscle spasm, dyspnea, sinus tachycardia, and bowel spasm, which should be present at some stage of the illness if the symptom-complex is truly psychophysiologic. The response to therapeutic tests is usually positive in psychophysiologic problems but not so in psychomimic syndromes. That is to say that adrenalin will relieve bronchial spasm in asthma but that even a chordotomy may not be successful in relieving the symptom-complex. The anniversary aspect of the psychomimic syndrome is not usually the case in psychophysiologic illness.

Conversion reactions are also part of the differential diagnosis, and while it could be argued that psychomimic syndromes involve a conversion aspect I think this is not so. Conversion reactions involve organs under voluntary control primarily and this is not so with psychomimic syndromes. Objective clinical findings such as paralyses, tics, anosmia, and blindness are dramatically typical of conversion reactions, whereas the absence of objective clinical findings is a "must" in the diagnosis of a psychomimic syndrome. Dysfunction tends to be dramatic and "on-stage" in conversion reactions. Again, not so in psychomimic syndromes. Secondary gain is almost primary in conversion reactions but is absent in psychomimic syndromes.

These illnesses are treated and regarded as an organic problem or some variant thereof with the result that the patient suffers and bears with a series of evaluations, treatments and consultations. Referral to a psychiatrist does not occur very often because the patient has an "acceptable illness" which is regarded as chronic and treatable but not curable, as in the case of angina pectoris for example. These symptom-complexes are challenging, and intermittent evaluations are an acceptable part of the situation. This type of illness has not been recognized or studied in the past by the psychiatric profession and the lack of awareness makes for difficulties in diagnosis whenever such patients are seen in consultation.

My impression is that these patients are depressed but the depression is not florid because the organic illness being mimicked affords enough neutralization of the affect so as to obscure its depressive manifestations and dysfunction.

Treatment would most properly be along the approach one uses with depressive reactions. The therapeutic task is to get the patient to verbalize the underlying feelings of the ambivalent relationship thereby allowing the expression of affect to occur along verbal rather than nonverbal channels.

Summary

The psychomimic syndrome is a symptom-complex without organic basis mimicking the often fatal illness of an ambivalently related person. It tends to occur in anniversary time sequences and is accompanied by an affect of anxiety and depression, running a course of frequent consultations and therapeutic trials with infrequent referral to the psychiatrist.

Atrial Flutter Secondary to Digitalis Intoxication

Report of a Case

ALBERTO ROTSZTAIN, M.D.*

ATRIAL FLUTTER as a direct manifestation of digitalis excess is a very uncommon condition. The case to be presented in which this event occurs represents an example of misdiagnosis in a critical clinical situation.

Report of Case

M. T., a 60-year-old white man, was hospitalized on February 27, 1967 with the chief complaints of shortness of breath, productive cough, and peripheral edema of 2 weeks' duration. He was known to have chronic obstructive pulmonary disease but was on no medication at the time of admission. He appeared acutely ill, with a temperature of 101°F, blood pressure of 120/80, pulse rate of 150 per minute, and respiratory rate of 24 per minute. The neck veins were distended at 45°, and there was moderate cyanosis and 2+ ankle edema. The liver was enlarged with a positive hepatojugular reflex. The chest was emphysematous, the breath sounds were decreased in both lungs, and there were diffuse rhonchi and basilar rales. There was a right ventricular heave but no heart murmurs were heard. The sputum was purulent. The hemoglobin was 15.1 Gm. and the white blood count 10,400 with a shift to the left. Arterial blood gases revealed a PO_2 of 36 mm. Hg, PCO_2 of 56 mm. Hg, and pH of 7.34. Chest X-ray films showed changes consistent with chronic obstructive pulmonary disease and pulmonary congestion. An electrocardiogram showed sinus tachycardia at a rate of 150 per minute (figure 1-a). The patient was treated for respiratory failure in a conservative manner with low oxygen flow administration, but in view of his poor response a tracheostomy and artificial ventilation were later required. Because of associated congestive heart failure, digoxin 2 mg. orally and Cedilanid® 0.6 mg. intramuscularly were given over the first 48 hours. Two days after admission, at 1:00 p.m., the electrocardiogram showed atrial flutter with varying block and some beats with possible aberrant ventricular conduction (premature ventricular contractions cannot be excluded) (figures 1-b, c); an extra dose of Cedilanid, 0.4 mg. intravenously, was given at this time. Two hours later (3:00 p.m.) the electrocardiogram showed atrioventricular dissociation with junctional tachycardia and occasional beats with aberrant ventricular conduction (figure 2-a). Digitalis was then discontinued and procainamide intramuscularly was started. Since the serum potassium concentration was 3.5 mEq/liter, 60 mEq. of KCl was administered intravenously over the following 24 hours. At 5:00 p.m. on the same day the electrocardiogram showed paroxysmal atrial tachycardia (PAT) with varying block and some aberrantly conducted beats (figure 2-b). At 11:30 p.m., after the second dose of procainamide was given, the electrocardiogram showed sinus rhythm (figure 2-c). The respiratory problem remained unsolved, and the patient died 2 weeks later.

Discussion

This case represents a very difficult clinical problem, with end-stage respiratory failure, which is well known to be very sensitive to digitalis. The initial dose of digitalis was certainly excessive, as a consequence of which the patient developed several forms of arrhythmia. The appearance first of atrial flutter misled the physicians to administer an extra dose of digitalis.

There is no need to emphasize the usefulness of digitalis in clinical practice or the well-known side-effects that its use can determine. The pharmacology and mechanism of action of digitalis have been widely studied.[1, 2, 3] Among all the electrocardiographic abnormalities secondary to digitalis intoxication, atrial flutter is a very rare one. Its recognition, of course, is of extreme importance, since digitalis is commonly employed for atrial flutter.

Since the first case of atrial flutter due to digitoxicity reported by Weed[4] there have been 23 more cases described in the literature.[5-16] Some of them have not been well documented. To consider any drug responsible for any type of cardiac arrhythmia, Coffman[12] suggested the following criteria: (a) The patient should be taking the drug at the time or immediately previous to the rhythm disturbance; (b) no other drug capable of producing the same changes should have been given at the same time; and (c) once the drug is discontinued the arrhythmia should subside within a reasonable period of time.

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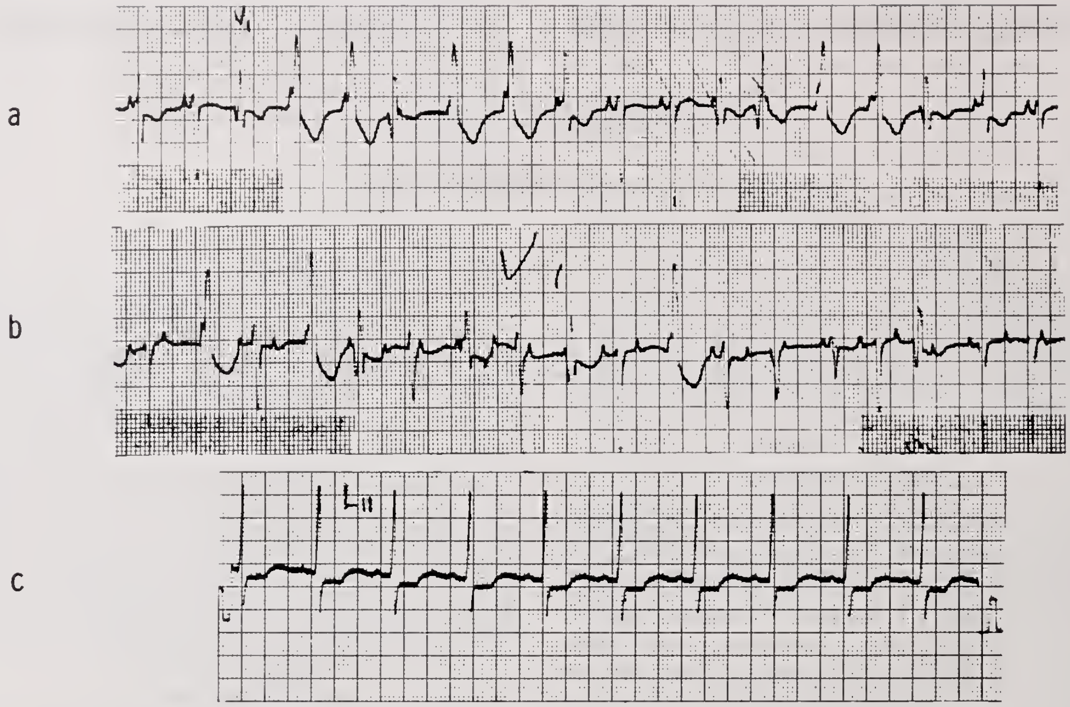

FIG. 1. (a) Admission rhythm strip on lead V$_1$ showing sinus tachycardia at 150 per minute; (b and c) continuous rhythm strip on lead V$_1$ showing atrial flutter (atrial rate is 300 per minute) with varying block and some aberrantly conducted beats.

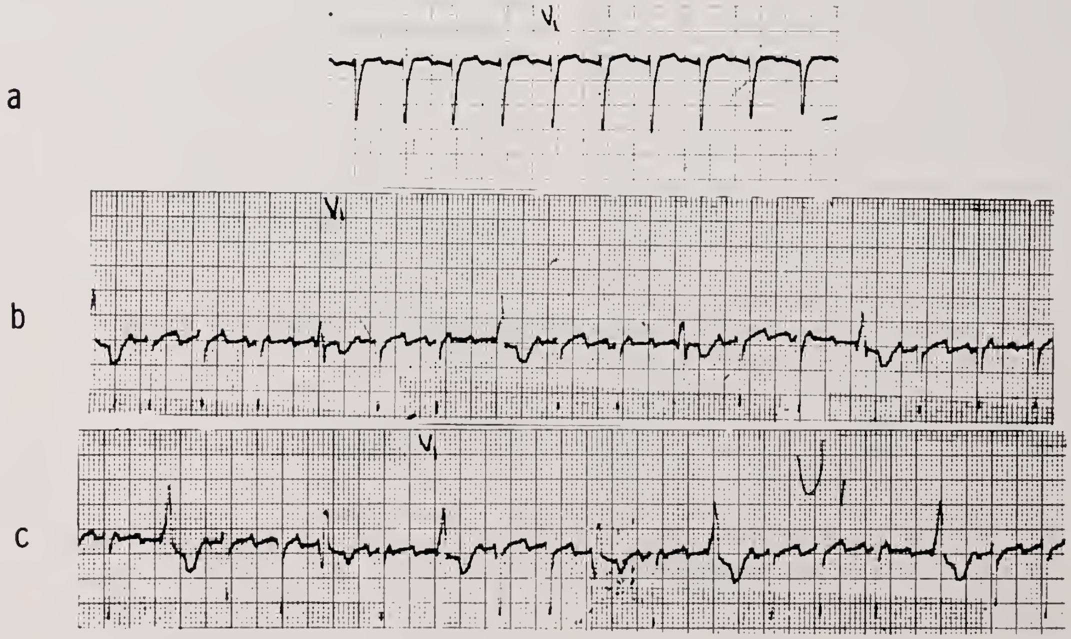

FIG. 2. (a) Rhythm strip on lead V$_1$ showing atrioventricular dissociation with junctional rhythm and aberrant ventricular beats as well; (b) rhythm strip on lead V$_1$ showing paroxysmal atrial tachycardia with varying block; and (c) rhythm strip on lead L$_2$ showing regular sinus rhythm.

Following these criteria it would not appear difficult to recognize any electrocardiographic abnormality secondary to digitalis excess, and indeed in general this is the case. In the present case this problem was not identified until more well-known patterns of digitoxicity were present (atrial-ventricular dissociation, PAT with block). It is likely that atrial flutter as a digitoxic manifestation is a very unstable and transient situation and therefore easily and commonly overlooked. It could be postulated that its basic mechanism is essentially similar to that of PAT, a more stable and persistent rhythm. Whenever atrial flutter is secondary to digitoxicity, certain specific electrocardiographic features are usually present: (1) varying block, (2) often ectopic beats of any type, and (3) an unstable rhythm. Patients with severe heart disease can present similar electrocardiographic abnormalities in the absence of digitoxicity, and here the clinician is confronted with a diagnostic challenge. In any case, the best approach should be to withhold the use of digitalis.

The present report should serve to emphasize the point that, although uncommonly seen, atrial flutter can be a manifestation of digitoxicity.

Summary

A 60-year-old male with severe chronic obstructive pulmonary disease developed several forms of arrhythmia after full digitalization. One of the rhythm disturbances was an atrial flutter with varying block that, retrospectively, was found to be secondary to digitoxicity, a fact that was misinterpreted at the time of its appearance. The rarity of the event should not minimize the great practical importance of a correct diagnosis.

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Macroglobulinemia Complicated by Pneumocystis Pneumonia and Cytomegalic Inclusion Disease Including Postmortem Examination of the Eyes*

Report of a Case

RAMON L. FONT, M.D.,† AND LORENZ E. ZIMMERMAN, M.D.‡

THE FOLLOWING CASE REPORT is taken from the Registry of Ophthalmic Pathology of the Armed Forces Institute of Pathology.

Clinical history. A 56-year-old Caucasian man complained of fever preceded by chills and profuse perspiration of 6 weeks' duration. He also had weakness, anorexia, headaches, and a sore throat, for which he was given erythromycin for about 1 week. During a previous admission 2 weeks earlier (September 2, 1965) a biopsy specimen from a scalene node was interpreted as malignant lymphoma resembling Hodgkin's disease. He was treated with nitrogen mustard and given blood transfusions. The patient had been considered a "borderline diabetic" and had always been obese. He had had pleurisy 18 years earlier.

Physical examination. A healed surgical scar was seen on the right side of the neck. The skin and mucosal surfaces showed marked pallor. A few moist rales were heard at the left base. The abdomen was obese, and the tip of the spleen was palpable. The remainder of the examination revealed no abnormalities, except for a temperature of 102°F.

Pertinent laboratory findings. On September 17, 1965 the white blood cell count was 23,000 with 13 per cent segmented forms, 15 per cent lymphocytes, and 72 per cent atypical lymphocytes. The hemoglobin was 8.0 Gm. and the hematocrit 24.5 per cent. The platelets were 30,000. Several L. E. preparations gave negative results. On November 30, 1965 the WBC count was 6,300, with 92 per cent segmented forms, 2 per cent band forms, 5 per cent lymphocytes, and 1 per cent eosinophils. The hemoglobin was 6.5 Gm. and the hematocrit 22.5 per cent.

Serum electrophoresis (September 28, 1965) revealed the albumin to be 2.02 Gm.; alpha 1 globulin 0.42 Gm.; alpha 2 globulin 1.12 Gm.; beta 1 globulin 0.40 Gm.; gamma globulin 4.04 Gm.; and total protein 8.0 Gm. Chest X-ray films demonstrated minimal obliteration of the left costophrenic angle, possibly by a small pleural effusion, and enlargement of the heart. Results of the Coombs' tests, direct and indirect, were positive. Examination of the spinal fluid and the routine blood chemistry, including urea nitrogen, bilirubin, and uric acid, were within normal limits. Tests for cold agglutinins and Bence Jones protein were negative.

An electrocardiogram on September 21, 1965 showed atrial fibrillation and nonspecific T-wave changes in the precordial leads.

Course in the hospital. On September 17, 1965 the patient was started on prednisolone (40 mg. daily) and was given 1 unit of packed red blood cells. On September 19, 1965 he was still febrile. A diffuse macular rash was noted over the abdomen, and petechiae and ecchymoses were present over the back. At this time the platelet count was 30,000. A large node was palpable in the left axilla. The spleen and liver were palpable. On September 20, 1965 the petechiae covered the entire body, and the fever continued. The patient received Keflin® and Chloromycetin®. Serum studies revealed that 50 per cent of the gamma globulins were macroglobulins. Skin tests for tuberculosis, histoplasmosis, and coccidioidomycosis were negative. A large ulcer was noted in the upper lip and another in the posterior wall of the pharynx. On November 6, 1965 enlarged nodes were noted under the jaw and in both axillae and groins. The patient was still receiving prednisolone (30 mg. daily), and the temperature started to stabilize. He became weak, with marked wasting and muscular atrophy of the lower extremities. On December 5, 1965 ophthalmologic examination of the right eye revealed scattered soft yellowish retinal exudates with indistinct edges, but there were no hemorrhages. The diameter of the retinal

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* The work reported in this paper was supported in part by Public Health Service Training Grant 5 T1 NB 5379 from the National Institute of Neurological Diseases and Blindness, National Institutes of Health, Public Health Service, United States Department of Health, Education, and Welfare.

The opinions or assertions contained herein are the private views of the authors and are not to be construed as official or as reflecting the views of the Department of the Army or the Department of Defense.

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vessels appeared normal. The left eye showed a large retinal hemorrhage inferotemporal to the optic disc and small retinal hemorrhages and exudates in all quadrants posteriorly. The retinal veins appeared dilated to about twice normal size. There was some retinal edema, as well as a slight cellular reaction in the vitreous. No papilledema was noted in either eye. The patient developed nuchal rigidity and consolidation at both pulmonary bases and died on December 6, 1965.

Pathologic findings. Significant pathologic findings were limited primarily to the reticuloendothelial system, the lungs, and the eyes.

The spleen weighed 420 Gm. Its external surface showed several nodular white areas that had the appearance of infarcts. The edge of the liver was 1 cm. below the right costal margin, and the organ weighed 2,250 Gm. On section the surface appeared slightly congested, and there was poor demarcation of the lobular architecture. The lymph nodes of the neck, axillae, groins, peribronchial, periaortic, mesenteric, and retroperitoneal regions were enlarged and firm.

The lungs weighed 1,700 Gm. together, and on cut section the surface appeared congested and edematous. In both lower lobes there were several pale areas of consolidation.

Microscopic findings. Dilatation and congestion of the sinusoids and increased deposits of hemosiderin were seen in the spleen. Several well-defined subcapsular areas of ischemic infarction were present. A moderate diffuse infiltration of lymphocytes, plasma cells, and histiocytes was present. In the liver, centrolobular sinusoidal dilatation and scattered ill-defined foci of necrosis were present. The lobular architecture was preserved in most areas. The periportal spaces contained a slight infiltration of histiocytes and lymphocytes. Many liver cells contained a yellowish-brown isotropic pigment that gave a positive Prussian blue reaction. There were bile thrombi in some of the bile ducts. Mild fatty infiltration was seen in some areas.

The bone marrow was very hypercellular, with reduction of the amount of adipose tissue. Moderate granulocytic hyperplasia was present, and the myeloid/erythroid ratio was 8-10:1. A moderate increase in plasma cells, lymphocytes, and plasmacytoid lymphocytes was present throughout, and occasional Russell bodies were seen.

The normal architecture of the lymph nodes was effaced (figure 1) by an infiltrate of lymphocytes, plasmacytoid lymphocytes, histiocytes, and eosinophils (figure 2). Moderate vascular congestion was present. Extravasated proteinaceous acidophilic exudate and areas of interstitial fibrosis were present in many areas. Most of the vessels had in their lumina material that stained positively with periodic acid-Schiff.

The lungs showed acidophilic, foamy and vacuolated intra-alveolar material (figure 3) that stained intensely with periodic acid-Schiff. Many alveoli were lined by prominent alveolar cells, which in some areas appeared hyperplastic. Many alveolar septa were thickened and moderately infiltrated by neutrophils, histiocytes, plasma cells, and lymphocytes. Special stains (Gomori's methenamine-silver technique) demonstrated the presence of organisms within the alveoli that were morphologically characteristic of *Pneumocystis carinii* (figure 4). In a few areas there were large cells that exhibited a slightly eccentric nucleus containing a reddish-purple inclusion surrounded by a halo and a basophilic granular cytoplasm. These inclusions were considered typical of cytomegalic inclusion disease (figure 5).

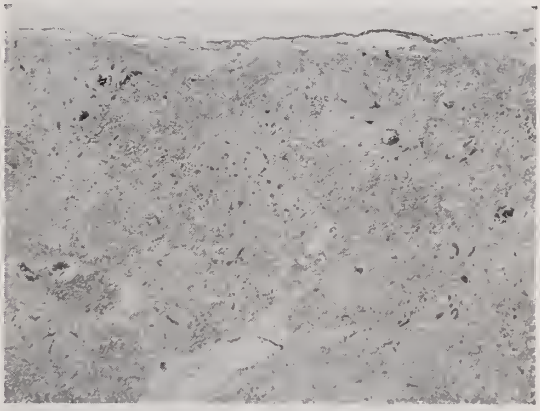

FIG. 1. The cortical architecture of the lymph node is generally effaced, and only ill-defined scattered follicles are present (hematoxylin and eosin, × 23).

Both eyes revealed alterations in the retina and choroid posteriorly. The remaining ocular structures were not remarkable. In the retinas moderate edema of the nerve fiber layer was seen, as well as areas of hemorrhage that were located primarily in the nerve fiber layer but also scattered throughout the more superficial layers. At the posterior pole a fusiform hemorrhage in the outer plexiform layer had ruptured through the outer retina into the subretinal space (figure 6). A few thrombosed capillaries were seen in this area. Several peripapillary microinfarcts in the

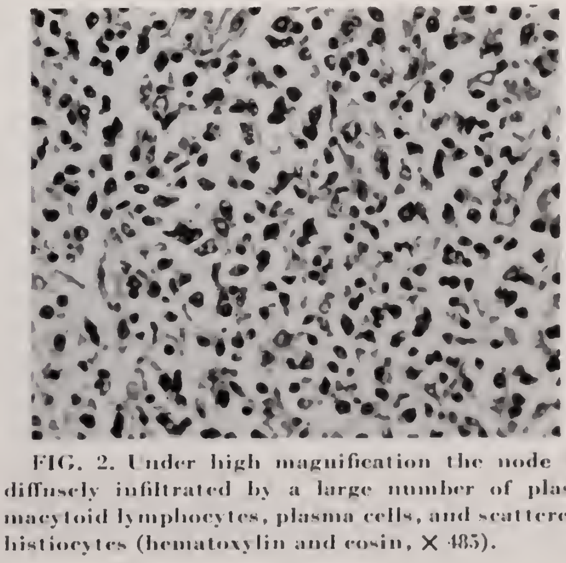

FIG. 2. Under high magnification the node is diffusely infiltrated by a large number of plasmacytoid lymphocytes, plasma cells, and scattered histiocytes (hematoxylin and eosin, × 485).

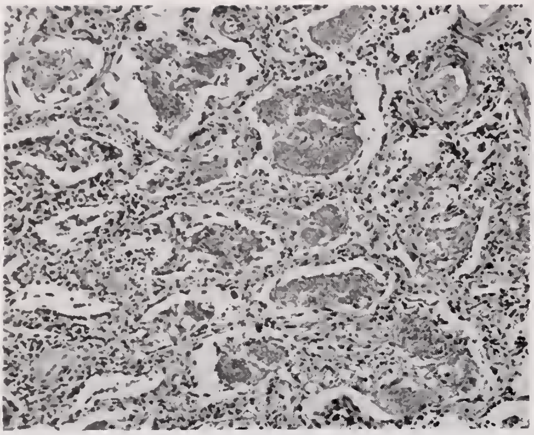

FIG. 3. Many alveoli are filled with foamy eosinophilic material, and some are lined by prominent alveolar lining cells. The septa are thickened and infiltrated by plasma cells and lymphocytes (hematoxylin and eosin, × 100).

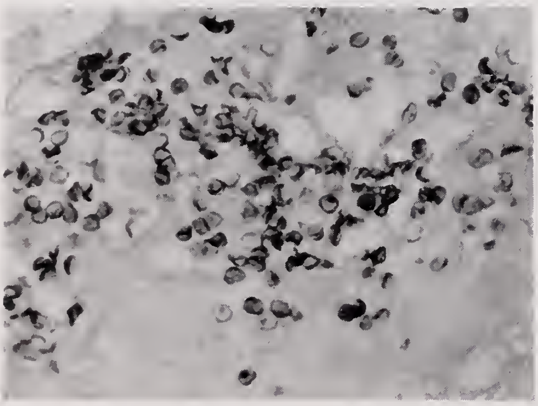

FIG. 4. The intra-alveolar exudate contains round or oval, occasionally crescent-shaped structures, some of which show an inner nuclear body that is characteristic of *Pneumocystis* pneumonia (Gomori's methenamine-silver, × 750).

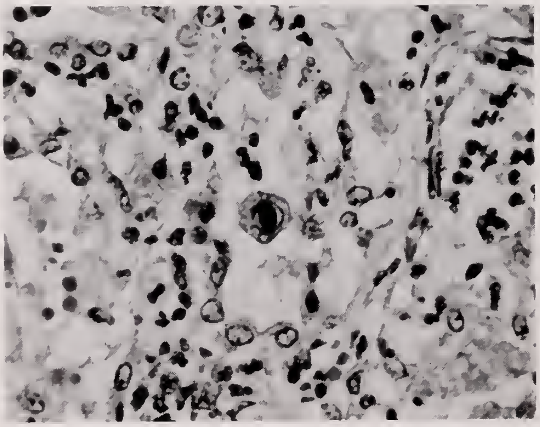

FIG. 5. Typical intranuclear inclusion of cytomegalic inclusion disease is surrounded by prominent alveolar lining cells, lymphocytes, and histiocytes (hematoxylin and eosin, × 575).

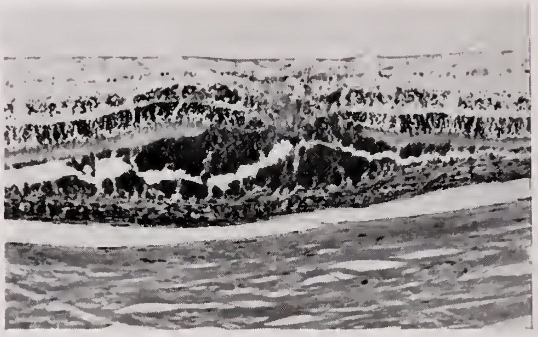

FIG. 6. Deep retinal hemorrhage that ruptured through the outer retinal layers into the subretinal space. The nerve fiber layer is edematous (hematoxylin and eosin, × 100).

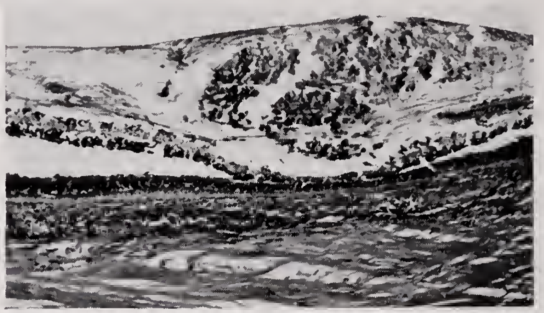

FIG. 7. A large "cytoid body" is present in the swollen nerve fiber layer in the peripapillary retina. An artifactitious cleft in the outer plexiform layer separates the inner and outer nuclear layers (hematoxylin and eosin, × 115).

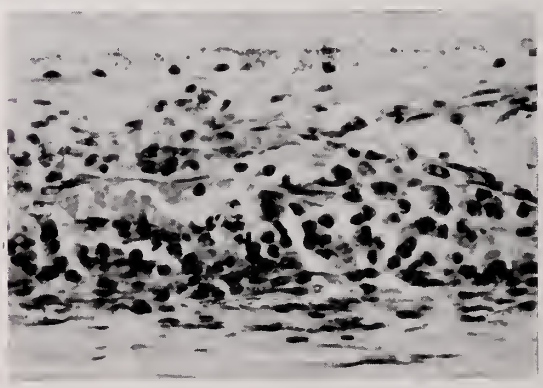

FIG. 8. The posterior choroid is moderately infiltrated by lymphocytes and plasmacytoid cells (hematoxylin and eosin, × 575).

nerve fiber layer were present (figure 7). Scattered focal collections of plasma cells, lymphocytes, and plasmacytoid cells were observed in the choroid, more prominent posteriorly (figure 8). No periodic acid-Schiff-positive intranuclear inclusions were seen.

Discussion

Primary macroglobulinemia of Waldenström is a systemic proliferative disease of the lymphoreticular tissue with predominantly lymphocytic differentiation. The lymphocytes produce an abnormal amount of glycoprotein and often show cytologic features that are intermediate between those of lymphocytes and plasma cells (intermediate cells). For this reason the cellular infiltrates are usually described as plasmacytoid lymphocytes or lymphocytoid plasma cells. Intranuclear periodic acid-Schiff-positive inclusions may be seen in these cells.[1] Immunofluorescent studies have demonstrated that the inclusions contain 18 S gamma macroglobulins.[2]

The most common clinical manifestations of the disease are hepatosplenomegaly, generalized lymphadenopathy, the presence of purpura, and other generalized manifestations, e.g., weakness, fatigue, and pain in bones.[3] The abnormal proteins that coat the platelets interfere with the release of platelet factors, and this accounts for the bleeding tendency observed in patients with macroglobulinemia.[4] The coating of polymorphonuclear leukocytes reduces the phagocytic capacity and therefore increases the susceptibility to infection. The erythrocytes are also coated, and this explains their short life-span as well as the rouleaux formation and the increased sedimentation rate. The laboratory studies often reveal anemia, leukopenia, and thrombocytopenia with a relative or absolute lymphocytosis; the presence of cryoglobulins; and positive findings from the Sia test.

The ocular findings of macroglobulinemia were emphasized by Ackerman[5] and include loss of vision resulting from occlusion of the central retinal vein, prominent dilated veins, peripapillary retinal hemorrhages, retinal edema, and exudative retinal detachment. The incidence of retinopathy ranges from 30 to 67 per cent. Ackerman suggested that the retinopathy is caused by intravascular stasis rather than by vascular occlusion.

The disease is often fatal after a protracted clinical course that ranges from 2 to 10 years. The use of plasmaphoresis, which removes the abnormal globulins from the circulation, and of penicillamine, which depolymerizes the macroglobulins in vitro, has been emphasized in the treatment of this disease. Schwab and co-workers[6] reported the regression of the retinopathy after treatment with plasmaphoresis.

Our patient had practically all of the clinical manifestations commonly seen in cases of macroglobulinemia. The histopathologic findings in a scalene lymph node were interpreted as malignant lymphoma suggestive of Hodgkin's disease.

Microscopically the spleen, bone marrow, and lymph nodes revealed diffuse infiltration of lymphocytes, plasmacytoid lymphocytes, and histiocytes. Scattered infiltrates were also present in the periportal spaces of the liver and in the kidneys. Many vessels as well as the fluid in the interstitial tissue contained an intensely periodic acid-Schiff-positive material, a common finding seen in macroglobulinemia, attributable to the high hexose content in the macroglobulin molecule. No periodic acid-Schiff-positive intranuclear inclusions were present.

Some of the original cases of H-chain disease showed histologic changes that suggested Hodgkin's disease.[7] Patients with this condition are prone to recurrent infections, as was evident in our case, in which bilateral pneumonitis caused by *Pneumocystis carinii* was found at autopsy. *Pneumocystis* pneumonia is a complication that may be seen in patients with malignant diseases of the lymphoreticular system, as reported by Esterly and Warner.[8] An additional finding was the association of *Pneumocystis* pneumonia with cytomegalic inclusion disease. This association has been reported by others.[9, 10, 11] *Pneumocystis* pneumonia has also been observed as a complication of multiple myeloma.[12]

The depressive effect of steroids and other chemotherapeutic agents on the immune response are well-known contributing factors that facilitate the infection as a terminal complication in chronically debilitated patients. Our patient received nitrogen mustard, antibiotics, and steroids.

Cytomegalic inclusion disease, though more common in infants, has also been reported in debilitated adults.[13] In a review of 41 cases from the literature, however, macroglobulinemia was not listed as one of the underlying diseases that predispose adults to this infection.

Waldenström's macroglobulinemia is considered to be an example of monoclonal gammopathy. A clinicopathologic classification of monoclonal macroglobulinemias has been suggested.[14]

Waldenström originally described 2 main types of macroglobulinemia: an idiopathic form, or essential benign hypergammaglobulinemia, and a secondary macroglobulinemia that occurs in patients with frankly malignant lymphoma. In our case we found no histopathologic evidence of malignant lymphoma, and therefore we consider this an example of idiopathic macroglobulinemia.

Summary

A 56-year-old Caucasian man had a febrile illness of 6 weeks' duration. A scalene node biopsy revealed changes that were initially interpreted as malignant lymphoma resembling Hodgkin's disease, and therapy with nitrogen mustard and blood transfusions was begun. While in the hospital the patient remained febrile and developed enlargement of the spleen, liver, and lymph nodes. Analysis of serum protein revealed a hypergammaglobulinemia with increased macroglobulins. A diffuse macular rash appeared, followed by petechiae and ecchymoses. At this time he was given antibiotics and steroids and developed ulcers of the lip and pharynx and marked wasting of muscle. He developed a pneumonitis and died 2½ months after admission.

Autopsy revealed generalized lymphadenopathy and hepatosplenomegaly. Microscopically the lymph nodes and bone marrow showed a diffuse infiltration by plasma cells and plasmacytoid lymphocytes consistent with macroglobulinemia. The final episode was a bilateral pneumonitis, which proved to be caused by *Pneumocystis carinii* and the virus of cytomegalic inclusion disease.

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Menetrier's Disease

Report of a Case with Review of the Literature

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Menetrier's disease was first described in 1888.[1] It has been referred to by several terms such as "giant hypertrophy of the gastric mucosa," "giant hypertrophic gastritis," "tumor simulating gastritis," "giant rugal hypertrophy," "polypoid swelling of the gastric mucous membrane," "adenopapillomatosis gastritis," "hypertrophic bulbous gastritis," "polyadenoma en nappe," and "polyadenomes polypeux." It is infrequent, but recent case reports indicate that the low incidence may be more apparent than real.

Report of Case

R. M., a 59-year-old Negro male, was admitted to the District of Columbia General Hospital on February 14, 1968 complaining of constant dull epigastric pain for 1 week and the passage of several tarry stools for 3 days. The pain was severe, continuous, and nonradiating. On the day of admission he vomited blood and experienced progressive weakness. He had taken "a few aspirin tablets" before coming to the hospital. He denied any gastrointestinal symptoms in the past. He had been a chronic alcoholic for several years.

Physical examination revealed a well-developed Negro male who was conscious and oriented. The blood pressure was 98/70 mm. Hg, the pulse rate, 136, and the oral temperature, 100.2°F. There was moderate tenderness without rigidity in the epigastrium. The bowel sounds were normal, and there was no visceromegaly. There were external hemorrhoids and dark brown feces strongly positive for blood (hematest). The remainder of the systemic examination was unremarkable.

The results of the initial blood analyses are shown in table 1. The urinalysis and serologic test for syphilis were normal. An electrocardiogram revealed a sinus tachycardia. A chest X-ray film was within normal limits. X-ray examination of the upper gastrointestinal tract revealed huge gastric folds simulating a lymphoma (figure 1, A and B).

Gastroscopy revealed patchy areas of hemorrhage in a hyperemic and edematous mucosa.

The initial management included a strict Sippy regimen, sedation, transfusion of whole blood, and gastric hypothermia. Shortly after admission the patient experienced 2 episodes of hematemesis and continued to pass black feces. During the initial 7 days a total of 14 units of blood was required to maintain the hematocrit between 32 and 36 per cent. Although the vital signs remained stable and the urinary output adequate the gastric aspirate was continously bloody.

The patient was submitted to an exploratory laparotomy on February 23. Gastrotomy revealed markedly enlarged mucosal folds. Two superficial ulcerations were noted on the posterior wall of the pars media. A biopsy (figure 2, A and B) was obtained, and the gastrotomy was closed. A truncal vagotomy and Heineke-Mikulicz pyloroplasty were done.

On the second postoperative day the stools were again tarry and the gastric aspirate continuously bloody. Serum electrolytes indicated a hypochloremic alkalosis (serum chlorides 85 mEq./L and CO_2 51 mEq./L). The hematocrit decreased from 38 per cent on the second day to 28 per cent on the fifth day. The blood urea nitrogen and creatinine increased steadily to 104 mg. and 8.8 mg. respectively. Twenty units of blood was required during the first 13 postoperative days. There were no other sites of bleeding, and the platelet count, bleeding, clotting and prothrombin time were repeatedly normal.

After correcting the electrolyte and acid-base imbalance a second exploratory laparotomy was performed following massive hematemesis on the thirteenth postoperative day. Ligation of bleeding points was attempted, and a tracheotomy was performed to relieve respiratory distress of apparent aspiration pneumonitis. Bleeding continued, and there was difficulty in maintaining a normal blood pressure and hematocrit in spite of daily transfusions of blood. Although the serum electrolytes including serum calcium and phosphorus were repeatedly normal, there were several grand mal seizures, and the patient died on the fourth postoperative day, 26 days, after admission and 17 days after the initial operation.

Pertinent findings at autopsy were limited to the abdomen and gastrointestinal tract. The stomach was filled with blood. There was giant hypertrophy of the gastric mucosa (figure 3). Multiple superficial ulcerations were scattered throughout the mucosal surface. On microscopic examination there was no evidence of

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TABLE 1: Laboratory Data

	Patient	Normal
Hematocrit	42.5%	42%–47%
White blood cell count	13,600	5,000–10,000
Platelets	278,810	150,000–400,000
Bleeding time	1.5 minutes	<3 minutes
Clotting time	3.5 minutes	<12 minutes
Blood urea nitrogen	25.0 mg./100 ml.	5–20 mg./100 ml.
Blood sugar	116 mg./100 ml.	60–105 mg./100 ml.
Serum sodium	142 mEq./L	135–145 mEq./L
Serum potassium	3.6 mEq./L	3.2–5 mEq./L
Carbon dioxide combining power	24 mEq./L	23–30 mEq./L
Serum amylase	180 Somogyi units	<180
Prothrombin time	15 seconds	15 seconds
Serum cholesterol (total)	266 mg./100 ml.	180–285 mg./100 ml.
Serum bilirubin (total)	0.35 mg./100 ml.	<1.5 mg./100 ml.
Thymol turbidity	1 unit	0–5 units
Cephalin flocculation	1+ after 48 hors.	0–2+
Serum alkaline phosphatase (King-Armstrong)	7.4 units	2–15 units
Serum glutamic-oxalacetic transaminase	40 units/ml.	4–40 units/ml.
Lactic dehydrogenase	620 units/ml.	250–500 units/ml.
Serum albumin	4 Gm./100 ml.	3.5–5.6 Gm./100 ml.
Serum globulin	2.8 Gm./100 ml.	2–3.5 Gm./100 ml.
Bromsulfalein	6% in 45 min.	<5%

malignancy, and the findings were identical with those noted in the biopsy obtained during the initial operation.

The mucosal surface of the lower half of the esophagus was hyperemic and granular, with many superficial ulcerations probably related to recent and prolonged gastric intubation. There was also a diffuse purulent peritonitis.

Bloody gastric contents were found in the lower lobes of both lungs. Examination of the brain showed only cerebral edema. Microscopic examination of the kidneys revealed hydropic nephrosis with mild tubular degeneration and dilatation.

Discussion

Since the hemorrhage continued during the preoperative and postoperative periods this patient obviously should have been submitted to a gastrec-

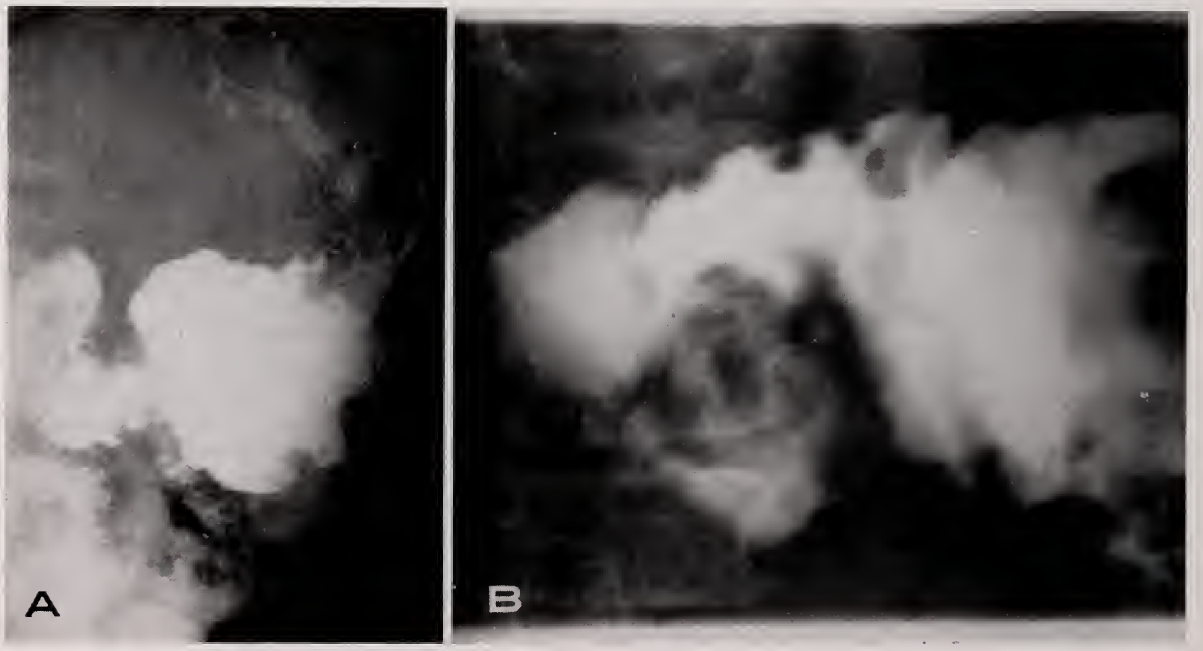

FIG. 1. A. Marked hypertrophy of mucosal folds of fundus and upper part of body of stomach. B. Hypertrophic changes involving lower half of body of stomach.

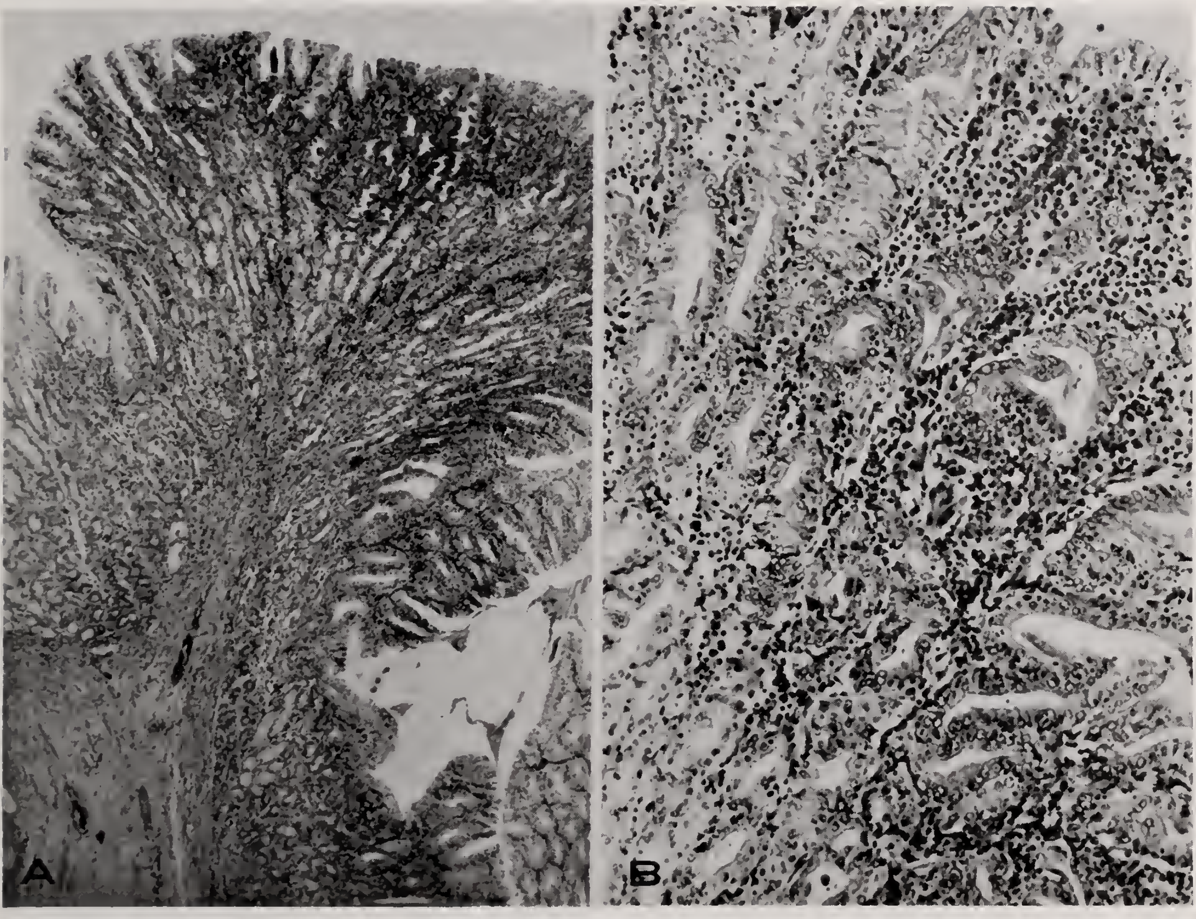

FIG. 2. A. Low-power view of gastric biopsy showing a polypoid, markedly hypertrophied mucosa. B. High-power view showing hypertrophic mucosal glands.

tomy or a total gastrectomy. The apparent benign nature of the pathology and the poor condition of the patient did not seem to justify such a radical procedure, particularly a total gastrectomy, at the time of the first operation. However, the subsequent course indicated that removal of part or all of the stomach was the only procedure that might have controlled the bleeding. There were no elaborate studies to demonstrate deficiencies of clotting factors, but the usual studies did not indicate a bleeding diathesis resulting from the enormous amount of blood transfused. Clinically there were no other bleeding sites other than the gastrointestinal tract.

The etiology of Menetrier's disease is unknown. Kenny[2] discovered multiple endocrine adenomata in 3 out of 20 cases. The disease is most common in the fifth and sixth decades with a male to female ratio of 3:1. Degnan[3] reported a case in a 3-year-old girl. Strode[4] found a significantly higher incidence in the Japanese than in the Caucasian population in the Hawaiian Islands.

Characteristically the stomach is soft and enlarged. The mucosal folds are large. Hypertrophy may be localized or involve the entire stomach except for a narrow zone along the lesser curvature. In none of the 18 cases reported from the Mayo Clinic in 1962 did the hypertrophic folds involve the lesser curvature of the antrum.[5] Mucosal erosions may be present. Microscopically there is hyperplasia of the surface epithelium. The development of the giant folds is due to upward infolding of the mucosa. The mucosa between the sulci may be normal or even atrophic. The parietal

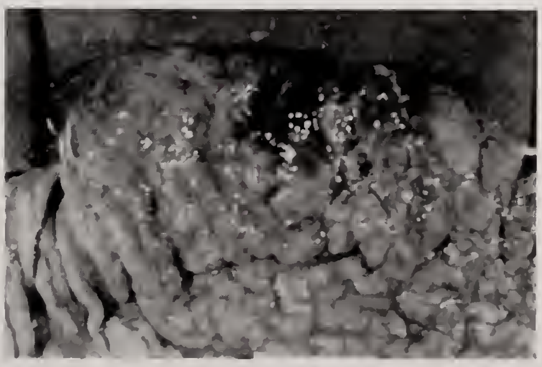

FIG. 3. Hypertrophy of gastric mucosa. Mucosal erosions are seen in upper portion.

cells may be replaced by mucin-secreting cells. Cystic dilatation of gastric glands combined with glandular penetration of the muscularis mucosa has been described by Butz.[6] Lymphocytic infiltration of the lamina propria and muscularis mucosa is generally present. Schindler[7] described the presence of Russell bodies in one case.

The clinical expression of this condition is variable. The patient usually complains of upper abdominal pain with discomfort or fullness, usually in the epigastrium. The pain may mimic that of peptic ulcer but is generally not relieved by alkalis. Nausea and vomiting occur often. Acute pyloric obstruction resulting from redundant mucosa has been described at operation and is considered a cause of vomiting.[8] Gastric bleeding manifested by hematemesis or melena is the most common feature, as exemplified by this case. In the experience of Benedict[9] the incidence of bleeding is 42 per cent. Hiccough may be troublesome, and at times there is an impressive weight loss. Schindler[10] described a patient with extraordinary cachexia. Peripheral edema and ascites related to hypoproteinemia may be the only complaints. With periods of quiescence alternating with exacerbations the duration of symptoms varies from 2 months to 15 years.

Laboratory investigation has usually disclosed hypoproteinemia in the cases in which protein fractionation has been performed. Protein fractionation in this case was normal. Although albumin is the principal fraction affected, the albumin-globulin ratio remains normal. For many years the hypoproteinemia remained an enigma. Maimon et al[11] suggested that the protein loss resulted from weeping gastric rugae. Balfour et al[12] suggested a toxic suppression of protein synthesis or storage. Citrin and co-workers,[13] using radioiodinated albumin, were the first to demonstrate the albumin loss in the gastric secretions. With this technique a reduced total albumin pool and increased daily turnover were demonstrated. Polyvinyl pyrrolidine and paper electrophoresis of gastric secretions have also been used to demonstrate albumin loss in gastric secretions.[14, 15, 16]

Gastric analysis has revealed achlorhydria in 50 per cent of the cases. The results of maximal histamine stimulation have not been reported. Roentgen findings suggesting Menetrier's disease include large gastric rugae, serrated and nodular greater curvature, thickness of the gastric wall, and a reticular pattern due to large amounts of gastric secretions. Gastroscopy has been of limited value; very few cases have been diagnosed by this procedure. The newer instruments which permit biopsy may render preoperative diagnosis feasible.

The efficacy of medical management and the natural course of Menetrier's disease are not known because only a few cases have been followed without surgical resection. Frank and Kern[17] followed a case for 8 years and observed spontaneous regression to total gastric atrophy after 5 years. Edema disappeared and the patient became asymptomatic. Achlorhydria developed, and a previously normal Schilling test became abnormal. Albumin also disappeared from the gastric secretions.

Chusid et al[18] reported 1 case of adenocarcinoma in Menetrier's disease, and they were able to collect 12 other cases from the literature. Other authors[2, 5, 19, 20] do not consider the entity premalignant. Burns and Gay[21] stated that in all pediatric cases thus far the process has been reversible and completely benign.

Summary

A case of Menetrier's disease with characteristic clinical, radiologic and pathologic features has been reported. The pertinent literature regarding pathogenesis of clinical features has been reviewed.

This entity is probably more frequent than is generally realized. It is anticipated that with the advancements in endoscopic techniques more cases will be identified, thus aiding in distinguishing it from malignant disease. More precise diagnosis will also provide an opportunity to observe the effects of nonsurgical management and the natural course of the disease.

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(*Continued on page 479*)

Electromyographic Evidence of Cerebral Malfunction in Migraine Due to Egg Allergy

Report of a Case

ELOISE W. KAILIN, M.D.* AND ALICIA HASTINGS, M.D.†

ELECTROMYOGRAPHY (EMG) is a technique which permits us to see electrical discharges in motor units of muscles. These discharges appear on the oscilloscope as many spikes. Our equipment allows us to record these on sound tape and to replay them at will through the oscilloscope. We[1] have demonstrated that when persons who are intolerant to DDT are exposed to an oily solution of crystalline DDT held under their noses the height of the electrieal spikes is greatly diminished (figure 1). This change is accompanied by manifestations of cerebral malfunction such as slumping in posture, ataxia, loss of visual acuity, and complaints from the subject of feeling unreal, detached, weak, drowsy, or "stupid." We have studied over a dozen persons with multiple chemical intolerances and have elicited similar changes in the electromyogram with substances generally considered quite innocuous, such as perfume, paradichlorobenzene crystals, and a highly purified mineral oil (Drakeol V.R.) used to make emulsions for injection into people.

Other workers have applied EMG to the study of various kinds of intoxications. Katz and Wolf[2] induced muscle activity in anesthetized patients by an electrical stimulator. They found that hyperventilation decreased EMG potentials but that 10 per cent CO_2 inhalation had no effect. Bergamini and Sibour[3] reported that early poisoning by lead or CS_2 to the point where these reduce the knee-jerk time have no effect on EMG. Adams, Denny-Brown and Pearson[4] noted that muscle is resistant to CO, cyanide, CCl_4 and Allotan, and that "unconvincing results" follow poisoning with lead, arsenic and antimony. Serra and Lambiase[5] observed that cigarette smoking causes decreased frequency of potentials and abnormal potential shapes. V. R. Rao[6] also reported that smoking induced a change in the shape of the potentials from the electrically stimulated brachioradial muscle. Serra and Covello[7] noted that arterial occlusion and CO poisoning to the point of acute anoxia produce both diminished number and amplitude of potentials. Toxic neuritis is also a known cause of electromyographic changes. The present report is the first, to our knowledge, in which electromyography has been applied to the study of allergy to a food.

Report of Case

Mrs. N. W., a 39-year-old mother of 3 children, had the kind of vigorous good health that went along with a preference for vacations in which she and her family slept in tents or trailers and cooked outdoors. In March of 1963 her children all developed mumps. At this time her neck became sore and she developed headache and malaise, but there was no swelling of the parotid glands. In early April she experienced difficulty in walking and trouble picking up objects and pushing buttons into buttonholes. She became unable to walk and was hospitalized for 10 days for neurologic study. The spinal fluid was reported as normal except for the presence of a few lymphocytes. At about this time she became unable to read because her attention span was so short that when she read the end of a sentence she had forgotten the beginning, and the material made no sense to her. Speech was a problem both because of aphasia and enunciation difficulties due to poor control of the movements of her tongue.

The patient improved with vitamins and hydrotherapy to the point where she was able to walk out of the hospital. Between this time and December of 1964 there was gradual improvement with periods of hours to days when she was partially disabled. For a number of months her temperature sense was impaired in her hands and feet. In October 1964, following occipital headache and a stiff neck lasting for a week, she was hospitalized again and found to have a normal EEG, normal cerebral scan, but almost no sugar in the spinal

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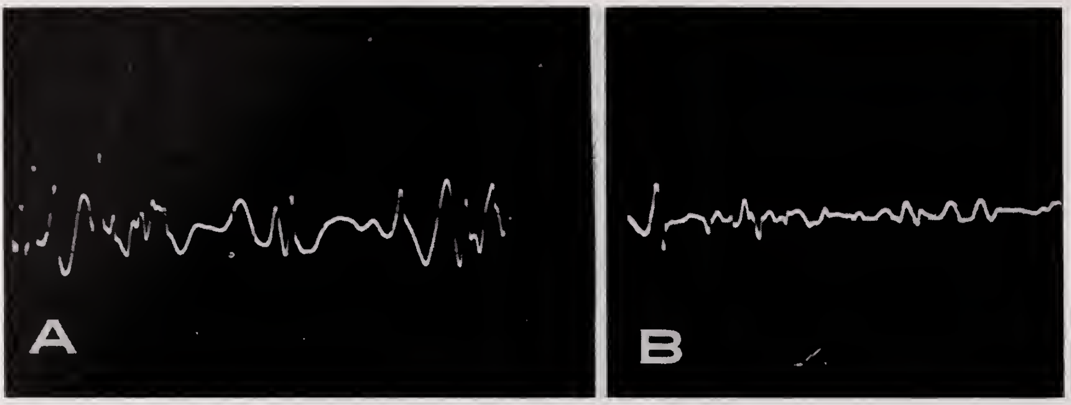

FIG. 1. Electromyography: right middle deltoid, calibration 1,000 μv. Test substance: DDT 1,000 ppm in oil, infranasal. Exercise: Holding 5-lb. weight at arm's length for 30 seconds. A—before DDT, B—after DDT.

fluid. A muscle relaxant and antihistamine were prescribed, and these seemed to help a great deal. She then had no trouble walking on level ground but could not handle stairs. There was no dizziness or blurred vision.

The history of allergy revealed migraine type headaches in her teen-age years but none in the 15 years previous to December 1964. There was iodine sensitivity with the development of blisters at the site of iodine contact, and a test with radioiodine intravenously was followed an hour later by painful blisters around the throat and mouth which persisted until an antihistamine was taken. As to the family history, a son has systemic allergy to hymenoptera sting. The daughter also developed inability to remember well after having had mumps. Her previous IQ was 116. This girl developed a migraine-type reaction to eggs, chicken, wheat, corn and tomatoes. Milk ingestion induced both fatigue and a skin rash.

Mrs. N. W. was examined twice with electromyography before and after she ate eggs. Since weakness in the legs was a major complaint, for the first examination we chose the left quadriceps femoris muscle. A double coaxial needle electrode was inserted in the belly of this muscle and a baseline reading taken. There were no abnormal potentials while the muscle was at rest. The muscle was then exercised by lifting the foot against a resistance of 10 lbs. attached to the ankle, by lifting the foot hard against the examiner's hand, and by lifting the foot gently. She looked and felt well. At this point she ate 2 scrambled eggs quickly. Forty-five minutes after starting to eat she became ill. There were coarse tremors of her hands, the speech was slurred, and the posture was slumped. She showed gross incoördination in carrying out a finger-to-nose test. She also had difficulty in lifting her leg. On performing the Romberg test she fell backwards and to the left. At this point, as shown in figure 2, potentials in the left quadriceps were 1,500 μv. as compared with the control value of 3,500 μv. on lifting the weight. Potentials for the other exercises were similarly diminished, and there were fasciculations in the muscle which were not there before. She was allowed to recover spontaneously.

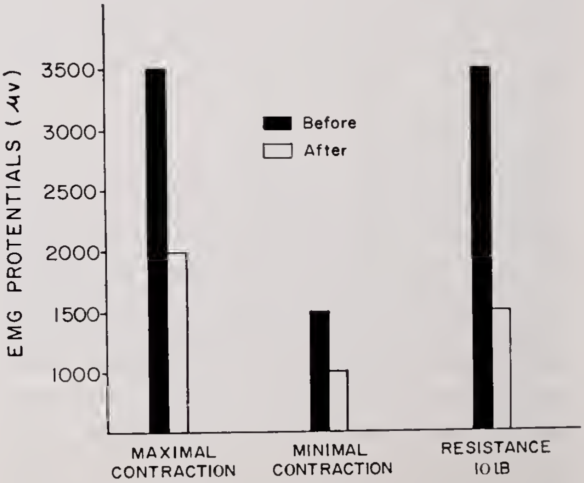

FIG. 2. Electromyography, rectu femoris before and after ingestion of egg.

The patient was examined 2 months later on a morning when she was feeling well and before breakfast. This time another leg muscle, the left anterior tibialis, was examined. Again, no abnormal potentials appeared at rest. The exercises given consisted of first, maximal dorsiflexion of the foot against downward thrust of the examiner's hand, second, barely raising the toes, third, resistance against a 5-lb. weight suspended from the dorsum of the foot, and fourth, repeated dorsiflexion of the foot in time to a metronome set at 20 beats per minute. These exercises were performed without difficulty. Then she ate 1 egg.

There were no obvious effects for about 20 minutes. Then within a period of 2 to 4 minutes she became uncoördinated, slumped in the chair, and sat with tears streaming down her face. An attempt to repeat the EMG readings was not satisfactorily carried out because she was unable to raise her foot on request. At this point a galvanic current was applied to the skin over the muscle belly to provide a supramaximal stimulus. This resulted in adequate muscle response, but the potentials were not recorded. With the aid of 2 people to support her she was assisted to a desk in an adjacent room and asked to write her name. She held the pencil but did not move it. She appeared to have a waxy immobility and continued to cry. When asked what was wrong she said she couldn't remember her name. We told her her name and she printed it in uncertain, large letters. Normally she writes with a very neat, small hand. EMG was repeated 37 minutes after the egg ingestion, and the muscle potentials at this time were about one-fourth of the starting potentials. Figure 3 shows the EMG potentials in response to maximum effort before and at various times after the egg ingestion. After another 33 minutes, or an hour and 10 minutes after ingestion of the egg, there was clinical improvement, and the EMG potentials were increased but not yet back to baseline levels.

Figure 4 shows the EMG potentials on minimal effort as she attempted to raise the toes gently, but she was unable to control this type of muscle movement. She tended to overreact, and when she was sickest produced larger potentials than before the egg ingestion. In another 15 minutes, or 85 minutes after eating the egg, her condition deteriorated again and she was unable either to carry out repetitive exercise or to produce minimal activity of the foot.

In order to hasten recovery ephedrine HCl was administered orally. This was sufficiently effective, and she could walk without assistance. At this point the EMG potentials had recovered to about two-thirds of the initial values. Figure 5 shows EMG potentials in response to the rather fixed task of supporting a 5-lb. weight from the foot. There was good correlation with the clinical state of the patient. At the end of this study the patient could follow instructions, but performance was slow and muscle tone poor. Her posture was still overly relaxed. The pulse rate, which was 91 at the start of the study, increased to 100 at the peak of her reaction, dropped to 84 in the first spontaneous recovery period, and increased to 104 when she relapsed. After the ephedrine the pulses decreased to 78 and then leveled off at 84.

Discussion

This patient illustrates mental and motor effects produced by a food allergen. Presumably sensitization occurred at the time of a mumps virus infection with associated encephalitis. Continued disability which was improved by administration of an antihistamine led to her referral for allergic study. Several allergens were discovered by the use of simple trial diets at home, and more were quickly located in a hospital setting in Chicago when she was put through Dr. Theron Randolph's diagnostic procedure of total fasting followed by addition of single staple foods. She has enjoyed good health since this problem was worked out but must be meticulous in avoiding her allergens. She is unable even to prepare for her family foods to which she is allergic because the odor of the food produces a delayed reaction of lethargy and incoördination.

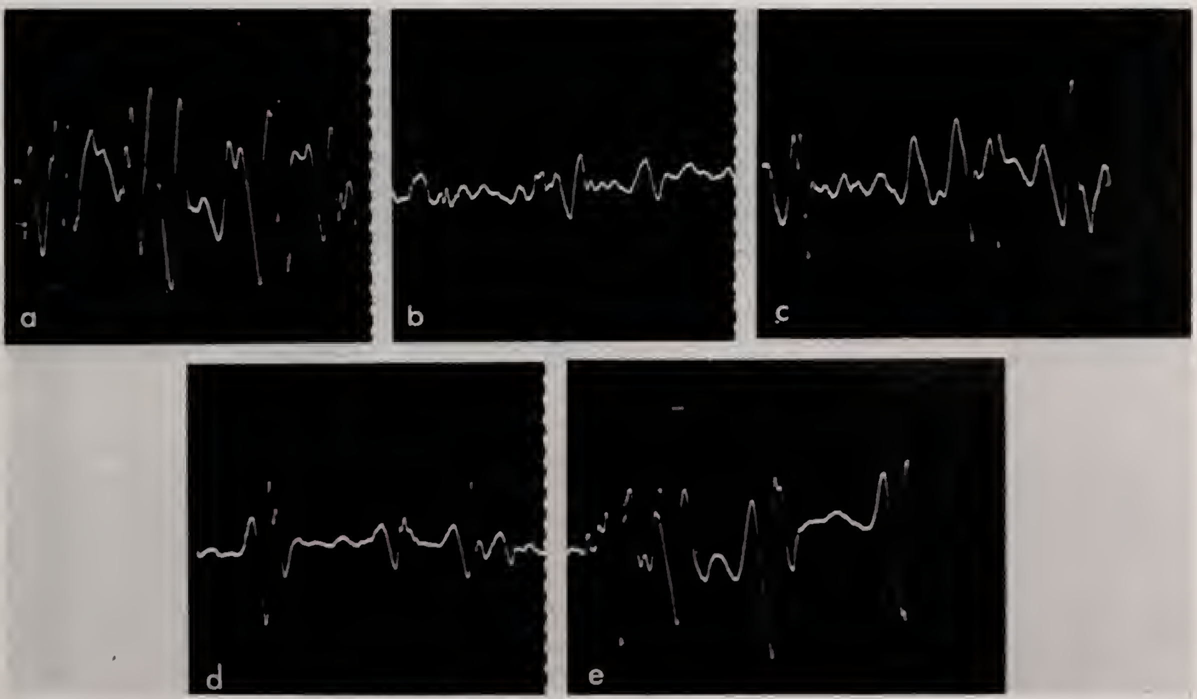

FIG. 3. Electromyography, left anterior tibialis. Exercise: maximal (raise toes hard against examiner's hand). Allergen: 1 soft-cooked egg, orally.

(a) Before egg (control), (b) acute symptoms at 37 min., (c) improved at 70 min., (d) relapsed at 85 min. (e) improved 30 min. after ephedrine (about 120 min. after egg).

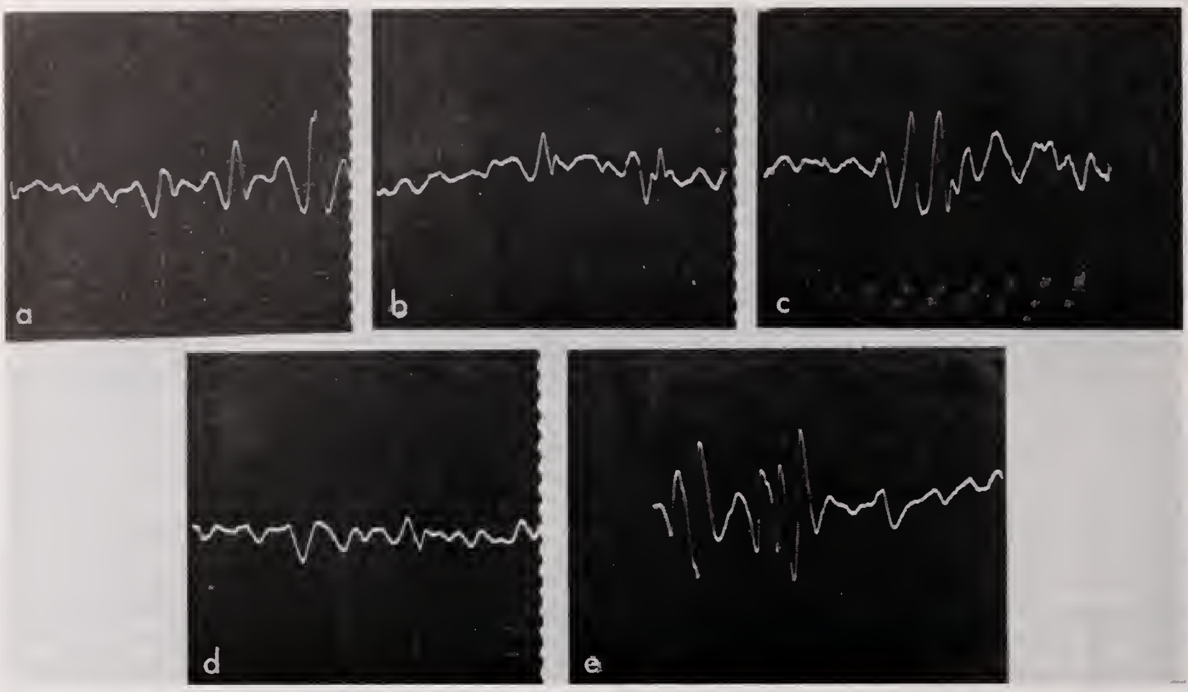

FIG. 4. Electromyography, left anterior tibialis. Exercise: minimal (raise toes gently). Allergen: 1 soft-cooked egg, orally.
(a) Before egg (control), (b) acute symptoms at 37 min., (c) improved at 70 min., (d) relapsed at 85 min., (e) improved 30 min. after ephedrine (about 120 min. after egg ingestion).

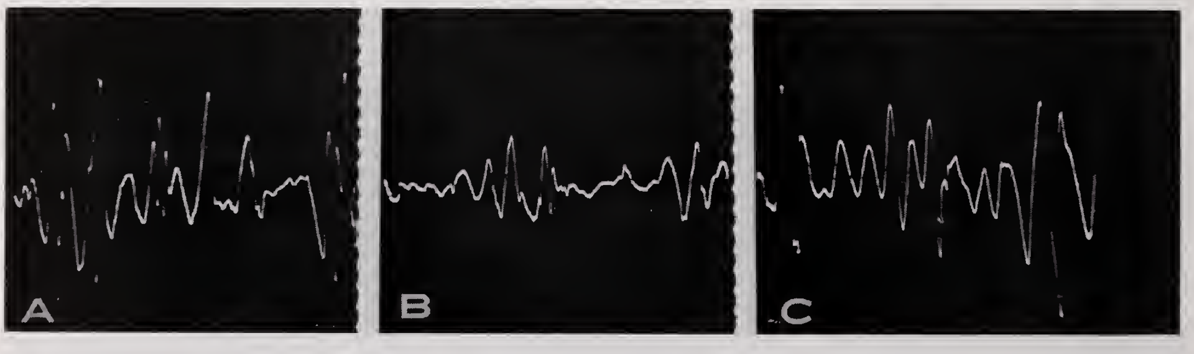

FIG. 5. Electromyography, left anterior tibialis. Exercise: sustained contraction: 5-lb. weight suspended from toes for 30 seconds. Picture at approximately 15 seconds. Allergen: 1 soft-cooked egg, orally.
A—Before egg ingestion (control); B—acute symptoms, 37 min. later; C—improved, 70 min. after egg.

Electromyography is a tool which measures the electrical potentials generated in a muscle. In a muscle with intact nerve supply no potentials appear except when the muscle is contracting. The size of the potentials reflects the number of motor units responding to the demand of the activity. In other words, with forcible or maximal contraction extra motor units will be recruited to carry out the work. Conversely, when muscle potentials are diminished either fewer motor units are contracting or less electrical energy is generated within the motor units. Inhibition of motor-unit firing can stem from biochemical malfunction at the motor end-plate in the muscle or can originate in the central nervous system. Electromyography has been applied by us to similar cerebral dysfunction elicited by exposure to very small quantities of DDT.[1] In working with DDT-sensitive people we learned that the EMG response to repetitive electrical stimulation is not decreased stepwise following exposure to DDT. This observation gives evidence that depression of EMG potentials arises central to the myoneural junction because malfunction distal to this junction in the muscle cell is worsened by each successive contraction and results in successively smaller potentials with each contraction.

In this case, while we cannot rule out an antigen-antibody induced inhibition of the motor end-plate since we did not apply the proper test to determine this point, the accompanying mental and emotional changes were so profound that we consider a central site of reaction to be more likely. We could postulate either that this patient who couldn't remember her name also was incapable of activating the excitatory motor centers of her cerebral cortex so that the muscle would contract, or that there was an undue stimulation of the cerebral motor inhibitory centers, which, in sending relaxing messages, effectively counteracted her attempts to perform the assigned exercises. Improvement after receiving the stimulant ephedrine suggests that the former is more likely the case.

This case teaches us that a clinical picture of emotional detachment with catatonic features can be caused by a food intolerance which affects cerebral structures. In our practice it is not uncommon to find low-grade emotional depression, chronic fatigue, and migraine headaches which can be elicited at will by exposing the patient to specific items chosen from his everyday diet or environment.

Summary

A 39-year-old housewife, following a probable subclinical mumps infection, became aphasic and uncoördinated to the point where she could not walk. Her illness, chronic for months, was improved by the use of antihistamines. Freedom from symptoms and resumption of a normal life followed discovery of allergy to milk, eggs, chicken, beef, pork, shrimp and lobster. Identification of these allergics was made by challenge feedings which within 20 to 30 minutes produced catatonic behavior, inability to recall her own name, regression of handwriting to a childish scrawl, ataxia, marked muscle weakness, and incoördination. Electromyography showed decreased potentials in voluntary muscles at the height of the reaction. The mechanism for the muscle-weakness may be depression of cerebral motor excitatory centers.

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Prosthetic Replacement of the Aortic Valve

A Current Assessment of Operative Results*

ANDREW G. MORROW, M.D., F.A.C.S.†

In the adult patient with clinically significant aortic stenosis or aortic regurgitation the aortic valve is always severely deformed, frequently lacking in substance, and usually the site of dense calcification. In the past, attempts were made to restore function to such valves by débridement, commissurotomy, or other reconstructive procedures, but experience has shown that these operations are ineffective in providing lasting benefit. Thus, when operative treatment becomes necessary in the adult with acquired aortic valve disease it must be assumed that total replacement of the valve will be necessary.

The Starr-Edwards prosthesis has been most widely utilized for aortic valve replacement, and between February 1963 and September 1967 it was employed in 175 patients undergoing valve replacement at the National Heart Institute. The early and late results of operation in these patients are summarized in the present report.

The Patients

The 175 patients were 16 to 68 years of age (mean 47 years); 136 were men and 39, women. Thirty-six were in functional Class II (New York Heart Association Criteria), 123 in Class III, and 16 in Class IV. The patients in Class II were all severely limited by episodic angina pectoris and/or syncope. The usual physical, roentgenographic, and electrocardiographic findings associated with aortic valve disease were present. All patients were studied preoperatively by cardiac catheterization and selective angiography. Pure or predominant aortic stenosis was present in 76 patients, and pure or predominant aortic regurgitation in 59 patients, and in 40 patients stenosis and regurgitation were considered of similar severity. Thirteen patients had defective aortic prostheses of other types, and 4 had aneurysms of the ascending aorta which necessitated resection or aneurysmorrhaphy. Excluded from present consideration are other patients in whom aortic valve replacement was accompanied by an operation on the mitral and/or tricuspid valve.

The aortic valve was exposed during total cardiopulmonary bypass conducted during mild (30°C) general hypothermia. The left coronary artery was perfused. The diseased valve and any residual calcific deposits in the annulus and septum were resected and a prosthesis of suitable size inserted. The valves were those available at the time, and they had silastic poppets and bare metal struts and orifices (Models 1000 or 1200). In virtually all patients anticoagulation with warfarin was instituted in the early postoperative period and maintained thereafter.

Results

Immediate mortality. Twenty-four patients (14 per cent) died during the hospital admission at which valve replacement was performed. Nine patients died in the operating room, 5 as a result of technical problems related to placing the valve or closing the aorta; 4 other patients could never sustain an effective circulation after bypass, and one of them was found at necropsy to have severe and unrecognized mitral stenosis. Postoperatively, fatal hypotension and low output occurred in 3 patients, possibly because the prosthesis was too large for the aorta. Five patients died of uncontrollable ventricular arrhythmia and 3 of renal failure. Cerebral hemorrhage, infected aortotomy, pulmonary consolidation, and endocarditis caused 1 death each.

Late mortality. Thirty-eight of the original 175 patients (22 per cent) have died at intervals of 3 months to 5 years after operation. In 10 patients death was sudden and unexpected with no anatomic cause apparent at necropsy. Ten other patients have died as the result of degeneration of the silastic ball. The remaining 18 patients died of various causes, including left ventricular failure, arrhythmia, myocardial infarction, endocarditis, and hepatitis.

Thromboembolism. Since 1965 all patients with Starr-Edwards valves have been given therapeutic doses of warfarin unless a specific contraindication existed. Twenty-eight of the 113 surviving patients have had a total of 31 cerebral emboli with definite neurologic abnormalities. Twenty-five of the 28 patients recovered without detectable neurologic sequelae. In 2 patients mild residual abnormality persists, and in the other moderate weakness of the arm prevents employment. A number of other patients have described brief episodes of vertigo, paresthesia, or aphasia, but none has ever had a neurologic abnormality on examination. Two patients who died suddenly and unexpectedly were found at necropsy to have coronary artery emboli.

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* Submitted to the Medical Annals by the Washington Heart Association.

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Eight patients have experienced bleeding as the result of warfarin administration, and 2 of them with intracranial bleeding (intracerebral or subdural) died.

Symptomatic improvement. The 113 surviving patients have been followed for periods of 1 to 5 years (average 34 months), and detailed reassessments have been made in all. Eighty of the 113 survivors (71 per cent) are asymptomatic (Class I), while the remaining 32 experience symptoms only during unusual activity (Class II).

Hemodynamic improvement. Postoperative cardiac catheterization has been performed in 100 patients at an average interval of 7 months postoperatively. A systolic gradient across the prosthesis was usually evident, but the average value at peak systole was only 12 mm.Hg. The left ventricular end-diastolic pressure exceeded 15 mm.Hg in 66 patients preoperatively and fell postoperatively in all but 4 of these. The value was greater than 15 mm.Hg in only 15 patients postoperatively. The cardiac index was usually normal both before and after operation in patients with aortic stenosis. In two-thirds of those with aortic regurgitation it was abnormally low preoperatively and normal in all but 3 postoperatively.

Some Conclusions Concerning Aortic Valve Replacement

The immediate risk of aortic valve replacement is 10 to 15 per cent, and a significant number of survivors may be expected to die later of causes directly or indirectly related to the operation or the prosthetic valve. Thus, at this time operation should be recommended only to distinctly symptomatic and severely incapacitated patients, those in whom the risk of early death without operation can reasonably be considered equal to or greater than that associated with valve replacement. Valve replacement is certainly to be avoided under all but extreme circumstances in the child or adolescent. The diagnosis of aortic stenosis and/or aortic regurgitation is readily apparent on clinical examinations, but information concerning the severity of the malformation can only be obtained by appropriate hemodynamic and angiographic studies. Such studies should be applied preoperatively in most patients in order to provide assurance that symptoms are entirely or principally attributable to the defective valve and that improvement can be expected after valve replacement. When severe stenosis or regurgitation is proved to be present in a severely symptomatic patient, operation is always recommended. Certain preoperative findings, such as prior myocardial infarction, probably indicate an increased operative risk, but at this time none constitutes an absolute contraindication to operation.

Patients who survive operation derive gratifying symptomatic improvement, and in most this is accompanied by a return of the intracardiac pressures to normal or near-normal values.

These attitudes and conclusions concerning aortic valve replacement are based almost entirely on relatively early experiences with Starr-Edwards prostheses. Early mortality can certainly be reduced by more exact intraoperative and postoperative management, and almost two-thirds of the early deaths in this series could now be avoided. Also, valves used since September 1967 have metallic poppets, which should be indestructible, and fabric covering of the orifice and struts should eliminate or greatly reduce the incidence of systemic embolization. With these valves permanent anticoagulation is presently considered unnecessary. When there is sound evidence that modifications of the operation and the prosthesis have reduced the risk of late death or disability, valve replacement can then be recommended to patients early in the course of their disease.

President's Page

"ON THE EDUCATIONAL VALUE OF THE MEDICAL SOCIETY"

THE TITLE of this page was put in quotations because, as many of you remember, this was the topic of one of the addresses given by Sir William Osler and recorded in Acquanimitas. It pertains today no less than it did January 6, 1903.

In that address Sir William Osler said "that no class of men needs to call to mind more often the wise comment of Plato that 'Education is a life-long business'." How true! There are no more complicated and difficult problems than those seen in the practice of medicine—more so in the past 25 years, the period in which the science of medicine has not moved forward, but leaped forward. Almost yearly we hear of new discoveries in the field of antibiotics, hormones, steroids, chemical analyses, etc. How do we keep abreast?

T'was said, "The want of energy is one of the main reasons why so few persons continue to improve in later years. They have not the will, and do not know the way." Our medical society will show you the way; our members have the will and energy.

And so to our 1970 Annual Scientific Assembly. Dr. Thomas Curtin, General Assembly Chairman, and Dr. Robert Donohoe, Program Chairman, with the assistance of many other of our physicians, have put together a very impressive program, one aimed at today's problems. What do symptoms signify, how do we proceed to a final diagnosis and, more important how do we do this in our office? Ergo, the theme "Ambulatory Care and Preventive Medicine."

The rising costs of medicine relate most directly to hospital costs. The more we can do in diagnosis and treatment out of the hospital the more we will contribute to decreasing these costs. Pages could be written on the discussion and legislation contemplated by government, by the public, and by medicine's concern in this problem. Most of us have heard and read these repeatedly. But they are real and must be given studied consideration. A portion of the Scientific Assembly will be devoted to these thoughts.

The Committee on Scientific Assembly has done an excellent job in putting together a program that is extremely timely and informative. I hope our members will take the time to find this out.

Frank S. Pellegrini

Editorials

Scientific Assembly—1970

The 1970 Annual Scientific Assembly will be held, September 9, 10 and 11, at the Washington Hilton Hotel. The timing of this year's Assembly coincides with the end of vacations and the traditional return of faculty and students to their colleges. There is minimal conflict between our meeting and any national meeting.

Beginning in January your Program Committee met every 2 weeks to plan a program designed to interest most, if not all, physicians. The theme adopted by the Committee, "Ambulatory (or Office) Care and Prevention of Chronic Diseases," is most timely. It stresses the need for reducing costly hospital care by doing more diagnostic procedures in the office. The net result of the Committee's work has been a "nuts and bolts" type of program that should appeal to all. Plaudits go to Dr. Robert F. Donohoe, Chairman of the Program Committee. His leadership and experience were clearly evident in his conduct of the Committee's meetings. He was ably assisted by Drs. John S. Dillon, James E. Boland, Max J. Fischer, Sol Katz, John J. Lynch, and Herbert V. McKnight. The SAMA was represented on this Committee by Mr. John Mikos of Howard University College of Medicine, and the contribution of this medical student organization is appreciated.

This year's format, like previous successful programs, utilizes short presentations on a given topic followed by a panel involving all speakers. Time for questions will be allotted, providing for audience participation.

In honor of the Centennial Year of Children's Hospital the first morning session will be a Children's Hospital staff presentation. The emphasis will be on childhood diseases that lead to chronic diseases, respiratory problems, and antibiotics. We are honored to accord this fine old D.C. institution a session and are pleased that the program relates to the theme of the Assembly. To Dr. Robert H. Parrott a vote of thanks for his efforts.

Air pollution and its impact on health will be discussed by Dr. John T. Middleton. Other common and controversial problems, such as pruritus, urological problems, the menopause, and hormones will be discussed by men who are both knowledgeable and practical in their respective fields. Of special interest will be the session dealing with emergency care before hospitalization. Both clinical and legal aspects will be presented. Time has also been reserved for a nationally known speaker on health-care systems.

Dr. James R. Snyder's Committee on Scientific Exhibits has reviewed many applications and selected the best exhibits. Because of additional space this year, this part of the Assembly has been expanded.

The Medical Society Luncheon will be held, as in the past, on the first day of the Assembly, September 9. Medical School Alumni Luncheons and the Woman's Auxiliary Luncheon are scheduled for the second day. This year the Doctors' Office Staff Dinner has been retitled the "Physicians' and Office Staff Dinner." It is believed that physicians' staffs would prefer sharing this evening with their bosses. The Woman's Auxiliary has assumed a major role in preparing for the Annual Dinner Dance, September 11. Several meetings have been devoted to firming up plans to make this annual get-together of Medical Society members and their wives a gay evening.

As other General Chairmen in the past have stated, the Assembly is your Assembly. Many members have accepted duties and responsibilities to produce a truly excellent program. All of us owe our Society loyalty and support because it represents each of us in medical affairs. The Scientific Assembly is the Society's annual contribution to postgraduate education. All of us—chairmen, committee members, and Medical Society staff—ask that your support and participation be evidenced by your attendance. Mark your calendar for September 9, 10 and 11. See you there!

Thomas E. Curtin, M.D.
General Chairman

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Warnings: Use with discretion during the second and third trimesters of pregnancy and restrict to patients not cured by topical measures. Flagyl (metronidazole) is secreted in the breast milk of nursing mothers. It is not known whether this can be injurious to the newborn.

Precautions: Mild leukopenia has been reported during Flagyl use; total and differential leukocyte counts are recommended before and after treatment with the drug, especially if a second course is necessary. Avoid alcoholic beverages during Flagyl therapy because abdominal cramps, vomiting and flushing may occur. Discontinue Flagyl promptly if abnormal neurologic signs occur. There is no accepted proof that Flagyl is effective against other organisms and it should not be used in the treatment of other conditions. Exacerbation of moniliasis may occur.

Adverse Reactions: Nausea, headache, anorexia, vomiting, diarrhea, epigastric distress, abdominal cramping, constipation, a metallic, sharp and unpleasant taste, furry or sore tongue, glossitis and stomatitis possibly associated with a sudden overgrowth of *Monilia*, exacerbation of vaginal moniliasis, an occasional reversible moderate leukopenia, dizziness, vertigo, drowsiness, incoordination and ataxia, numbness or paresthesia of an extremity, fleeting joint pains, confusion, irritability, depression, insomnia, mild erythematous eruptions, "weakness," urticaria, flushing, dryness of the mouth, vagina or vulva, vaginal burning, pruritus, dysuria, cystitis, a sense of pelvic pressure, dyspareunia, fever, polyuria, incontinence, decrease of libido, nasal congestion, proctitis, pyuria and darkened urine have occurred in patients receiving the drug. Patients receiving Flagyl may experience abdominal distress, nausea, vomiting or headache if alcoholic beverages are consumed. The taste of alcoholic beverages may also be modified.

Dosage and Administration: *In the Female.* One 250-mg. tablet orally three times daily for ten days. Courses may be repeated if required in especially stubborn cases; in such patients an interval of four to six weeks between courses and total and differential leukocyte counts before, during and after treatment are recommended. Vaginal inserts of 500 mg. are available for use, particularly in stubborn cases. *When the vaginal inserts are used* one 500-mg. insert is placed high in the vaginal vault each day for ten days and the oral dosage is reduced to two 250-mg. tablets daily during the ten-day course of treatment. Do not use the vaginal inserts as the sole form of therapy. *In the Male.* Prescribe Flagyl only when trichomonads are demonstrated in the urogenital tract, one 250-mg. tablet two times daily for ten days. Flagyl should be taken by both partners over the same ten-day period when it is prescribed for the male in conjunction with the treatment of his female partner.

Dosage Forms:		
	Oral tablets . . .	250 mg.
	Vaginal inserts . .	500 mg.

*References available on request.

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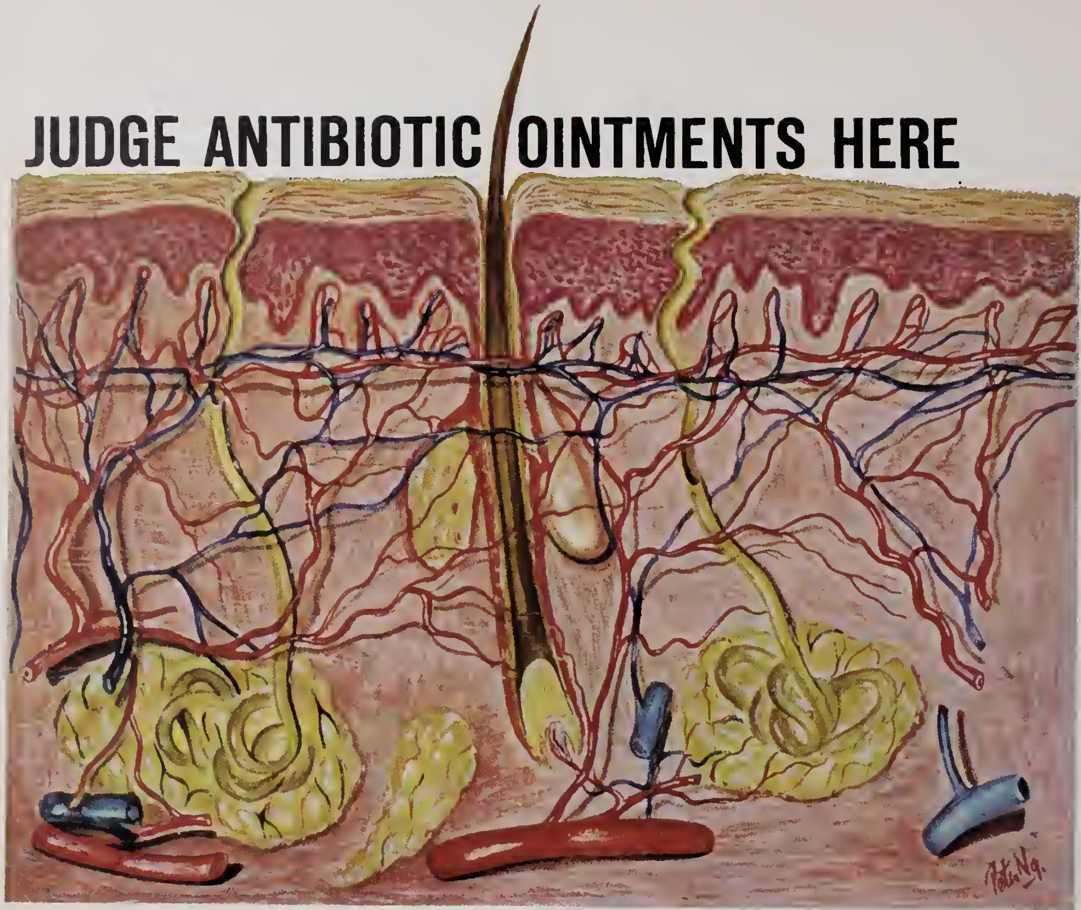

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OFFICIAL PROGRAM

1970 Scientific Assembly

The Medical Society of the District of Columbia

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ALL SCIENTIFIC SESSIONS IN THE JEFFERSON BALLROOM

Thomas E. Curtin, M.D., *Presiding*
General Chairman, 1970 Scientific Assembly

SCIENTIFIC PROGRAM

WEDNESDAY MORNING, SEPTEMBER 9, 1970

Welcome by **Frank S. Pellegrini, M.D.**, President, The Medical Society of the District of Columbia

PREVENTION AND EARLY DETECTION OF RESPIRATORY DISEASE

(In Recognition of the 100th Anniversary of Children's Hospital of the District of Columbia)

MODERATOR: **Robert H. Parrott, M.D.**

Director, Children's Hospital of D. C. and Professor of Pediatrics, George Washington University School of Medicine

9:15 **EARLY DETECTION AND TREATMENT OF ALLERGY TO PREVENT CHRONIC PULMONARY DISEASE**
William A. Howard, M.D.
Chief, Allergy Section, Children's Hospital of D. C.; Clinical Professor of Pediatrics, George Washington University School of Medicine

9:40 **VIRAL AND MYCOPLASMA INFECTIONS AND VACCINES—CAN PNEUMONIA AND BRONCHIOLITIS BE PREVENTED?**
Robert M. Chanock, M.D.
Chief, Laboratory of Infectious Diseases, National Institute of Allergy and Infectious Diseases

10:05 **OFFICE CULTURE OF RESPIRATORY INFECTIONS TO PREVENT MORBIDITY AND TO REDUCE ANTIBIOTIC USE—IS IT PRACTICAL?**
Andrew M. Margileth, M.D.
Professor and Vice Chairman, Department of Pediatrics, George Washington University School of Medicine; Senior Attending Pediatrician, Children's Hospital of D. C.

10:30 **TREATMENT OR PREVENTION OF RESPIRATORY DISEASE IN CHILDREN AND THE YOUNG ADULT PANEL DISCUSSION**
MODERATOR: **Robert H. Parrott, M.D.**
PARTICIPANTS: **William A. Howard, M.D.**
Robert M. Chanock, M.D.
Andrew M. Margileth, M.D.
Sydney Ross, M.D.
Clinical Professor of Pediatrics, George Washington University School of Medicine; Chief, Microbiology Section, Research Foundation, Children's Hospital of D. C.

11:00 INTERMISSION Visit Exhibits

11:15 **AIR POLLUTION: THE RESPONSIBILITY OF THE COMMUNITY, THE PHYSICIAN AND THE PATIENT**
John T. Middleton, Ph.D.
Commissioner, National Air Pollution Control Administration, Rockville, Md

WEDNESDAY AFTERNOON, SEPTEMBER 9

GYNECOLOGY TODAY: RECENT TRENDS IN CONTROVERSIAL AREAS

Moderator: **William H. Cooper, M.D.**

2:00 **PRACTICAL AMBULATORY MANAGEMENT OF COMMON GYNECOLOGIC DISORDERS**
William H. Cooper, M.D.
Chairman, Department of Obstetrics and Gynecology, Sibley Memorial Hospital; Assistant Clinical Professor of Obstetrics and Gynecology, George Washington University School of Medicine

2:25 **AN ENDOCRINOLOGIST'S VIEW OF STERILITY AND FERTILITY**
Robert B. Greenblatt, M.D.
Professor of Endocrinology, Medical College of Georgia

2:50 **FACTORS INFLUENCING ESTROGEN REPLACEMENT THERAPY**
Abraham E. Rakoff, M.D.
Professor of Obstetrics and Gynecology and Medicine (Endocrinology), Jefferson Medical College

3:20 Intermission—Visit Exhibits

3:50 **MENOPAUSE—EVERYONE'S PROBLEM—PANEL DISCUSSION**
Moderator: **William H. Cooper, M.D.**
Participants: **Robert B. Greenblatt, M.D.**
Abraham E. Rakoff, M.D.
Warren C. Johnson, M.D.
Assistant Clinical Professor of Psychiatry, George Washington University School of Medicine

THURSDAY MORNING, SEPTEMBER 10

OFFICE MANAGEMENT OF COMMON DERMATOLOGIC DISORDERS

Moderator: **Sol Katz, M.D.**

Professor of Medicine and Director, Division of Pulmonary Diseases, Georgetown University School of Medicine

9:00 **OFFICE MANAGEMENT OF COMMON DERMATOLOGIC DISORDERS**
John A. Kenney, Jr., M.D.
Professor and Chairman, Division of Dermatology, Howard University College of Medicine

9:30 **INSIGHT INTO ITCHING—A FREQUENT SYMPTOM WITH MULTIPLE CAUSES AND DIVERSE MANAGEMENT—PANEL DISCUSSION**
Participants: **Sol Katz, M.D.**
John A. Kenney, Jr., M.D.
Robert S. Smith, M.D.
Clinic for Intestinal and Rectal Surgery; Chief of Proctology, Doctors Hospital
Zigmond M. Lebensohn, M.D.
Chief, Department of Psychiatry, Sibley Memorial Hospital; Clinical Professor of Psychiatry, Georgetown University School of Medicine

10:30 **MEDICINE'S FUTURE**
Intermission—Visit Exhibits

11:00 **Roger Egeberg, M.D.**
Assistant Secretary for Health and Scientific Affairs, Department of Health, Education and Welfare, Washington, D.C.

11:30 **MEDICAL ALUMNI LUNCHEONS**

THURSDAY AFTERNOON, SEPTEMBER 10

DIAGNOSIS AND MANAGEMENT OF GENITOURINARY PROBLEMS

Moderator: **Roger Baker, M.D., Ph.D.**

2:00 **THE ART OF URINALYSIS**
Leonard B. Berman, M.D.
Chief, Department of Nephrology, Mount Sinai Hospital of Cleveland

2:40 **OFFICE MANAGEMENT OF BACTERIURIA**
Marvin Turck, M.D.
Chief of Medicine, USPHS Hospital, Seattle, Wash.; Associate Professor of Medicine, University of Washington

3:10 Intermission—Visit Exhibits

3:35 **ASSESSMENT OF PROSTATIC ENLARGEMENT**
Roger Baker, M.D.
Professor and Director, Division of Urology, Georgetown University School of Medicine

4:00 **SIGNIFICANCE OF HEMATURIA**
Alvin E. Parrish, M.D.
Professor of Medicine and Director, Division of Renal Diseases, George Washington University School of Medicine

4:15 **AMBULATORY MANAGEMENT OF CHRONIC URINARY TRACT INFECTION—PANEL DISCUSSION**

FRIDAY MORNING, SEPTEMBER 11

SYMPOSIUM ON CARDIOPULMONARY RESUSCITATION

"What is, what can and what should be done outside of the cardiac care unit?"

Moderator: **Leonard Scherlis, M.D.**

9:00 **SCOPE OF THE PROBLEM AND THE IDENTIFICATION OF THE HIGH PATIENT RISK**
Leonard Scherlis, M.D.
Professor of Medicine and Chief, Division of Cardiology, University of Maryland School of Medicine

9:25 **THE LEGAL RESPONSIBILITY OF THE PHYSICIAN TO USE AND PROVIDE ACCEPTED TECHNIQUES OF CPR**
Robert D. Huber, J.D.
Legal Counsel, Cardiopulmonary Resuscitation Committee, American Heart Association, San Francisco

9:50 **THE VARIED CLINICAL MANIFESTATIONS OF EARLY MYOCARDIAL INFARCTION—WHO SHOULD BE OBSERVED AND MONITORED AND FOR HOW LONG?**
James J. Leonard, M.D.
Professor of Medicine and Director, Division of Cardiology, University of Pittsburgh School of Medicine

10:15 Intermission—Visit Exhibits

10:45 **EMPIRICAL TREATMENT OF PATIENTS PENDING AVAILABILITY OF MONITORED EQUIPMENT**
T. James Waters, M.D.
Assistant Professor of Medicine, Georgetown University School of Medicine; Director, Intensive Care Unit, Georgetown University Hospital

11:10 **RESPONSIBILITY OF PHYSICIANS AND THE COMMUNITY FOR PROVIDING CARDIAC CARE UNIT TECHNIQUES OUTSIDE THE HOSPITAL**
James M. Bacos, M.D.
Chief, Department of Cardiology, Washington Hospital Center; Associate Professor of Medicine, George Washington University School of Medicine

11:35 **THE MOMENT OF DECISION TODAY! WHO SHOULD BE RESUSCITATED? WHERE? HOW?—PANEL DISCUSSION**

12:00 Adjournment

Scientific Exhibits

Exhibit Hall Will Be Open Wednesday and Thursday, 9 A.M. to 5 P.M.;
Friday, 9 A.M. to 12 Noon

EMERGENCY HEALTH SERVICES

Division of Health Mobilization, D. C. Health Services Administration and Committee on Emergency Medical Service, Medical Society of D. C.

PARENTERAL ALIMENTATION IN THE NEONATE

R. Peter Altman, M.D., and Judson G. Randolph, M.D. Departments of Surgery, the George Washington University School of Medicine and the Children's Hospital of the District of Columbia

THE SEARCH FOR NEW ANTICANCER DRUGS

National Cancer Institute, Bethesda, Md.

PULMONARY DATA BANK: GEORGETOWN PEDIATRIC PULMONARY CENTER

Frederic G. Burke, M.D., Robert E. Snell, M.D., Georgetown University School of Medicine: William R. Ayers, M.D., George Washington University School of Medicine; and Peter C. Luchsinger, M.D., Johns Hopkins University School of Medicine

DIABETES MELLITUS: CURRENT CONCEPTS

James M. Moss, M.D., DeWitt E. DeLawter, M.D., C. Robert Meloni, M.D., Lillian Recant, M.D., and Malcolm Martin, M.D., Alexandria, Va.

ANGIOGRAPHY OF TRAUMA

Whei-Rung Fu, M.D., Assistant Professor of Radiology, and William W. Stanbro, M.D., Professor of Radiology, George Washington University School of Medicine

THE EFFECTS OF ULTRASOUND ON BACTERIA

Mr. Carl Robert Clark, Gonzaga Senior High School, Washington, D. C., First Place Award Winner in the 1970 Science Fair

IN VIVO ANTIBODY REACTION TO PENICILLINASE

Mr. Gregory C. Couteau, Gonzaga Senior High School, Washington, D. C., First Place Award Winner in the 1970 Science Fair

COMPLICATIONS OF ENDOTRACHEAL INTUBATION

Homer L. Twigg, M.D., Chairman, Department of Radiology, and Charles E. Buckley, M.D., Chief Resident in Radiology, Georgetown University Hospital

WOMAN'S AUXILIARY TO THE MEDICAL SOCIETY OF D. C.

Mrs. Charles V. Pate, President, and Mrs. Seamus Nunan, Chairman of the Mental Health Committee, Woman's Auxiliary to the Medical Society of D. C.

PILOT SURVEY OF LEUKEMIA IN THE GREATER WASHINGTON AREA

George P. Blundell, M.D., Project Officer, and S. A. Devaris, R.N., Research Assistant, Research Foundation, Washington Medical Center

ANOMALIES OF THE AORTIC ARCH

Joseph W. Peabody, Jr., M.D., Vicente C. deGuzman, M.D., Michael G. Seremetis, M.D., William S. Lyons, M.D., Edgar W. Davis, M.D., Bernard J. Walsh, M.D., Sol Katz, M.D., and Albert J. Miele, M.D., Georgetown University School of Medicine

HOWARD UNIVERSITY COLLEGE OF MEDICINE TRAINING PROGRAM FOR NEIGHBORHOOD PHYSICIANS

William E. Matory, M.D., Director, Continuing Medical Education, Howard University College of Medicine

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Louis B. Balla, M.D., and Geza J. Jako, M.D., Washington, D. C.

AMERICAN ASSOCIATION OF MEDICAL ASSISTANTS

Washington, D. C. Chapter

CORONARY CARE IN A SMALL COMMUNITY HOSPITAL WITHOUT HOUSE STAFF

Gerald Church, M.D., Robert O. Biern, M.D., Richard I. Hochman, M.D., and Richard N. Peeler, M.D., Anne Arundel General Hospital, Annapolis, Md.

PATIENT, PHYSICIAN AND "THE PILL"

Antonio Hernandez Torres, M.D., and George Gandia, M.D., Department of Obstetrics and Gynecology, University of Puerto Rico School of Medicine

COMPUTER-ASSISTED PATIENT MONITORING

Patricia H. Russell, M.D., Automated Patient Monitoring Program, Departments of Anesthesiology and Clinical Engineering, George Washington University School of Medicine

KIDNEY DISEASE AND A KIDNEY DONOR PROGRAM IN THE METROPOLITAN WASHINGTON AREA

National Kidney Foundation, National Capital Area

UTERINE CANCER

The American Cancer Society, Washington, D. C. Division

SICKLE-CELL ANEMIA: SCREENING FOR ABNORMAL HEMOGLOBIN AS A MEANS OF GENETIC CONTROL

Roland B. Scott, M.D., Professor and Chairman, Department of Pediatrics; Angella D. Ferguson, M.D., Professor of Pediatrics; and Mary A. Wilkins, B.S., Research Assistant, Department of Pediatrics, Howard University College of Medicine

POSTOPERATIVE DEATHS IN THE DISTRICT OF COLUMBIA

Anesthesia Study Commission, Section on Anesthesiology of the Medical Society of the District of Columbia, and Roberto Fuentes, District of Columbia Health Services Administration

ALCOHOLISM—TREACHEROUS BUT TREATABLE

Vernelle Fox, M.D., L. Guy Chelton, M.D., and Charles Whisnant, M.D., Georgia Clinic Division, Atlanta, Ga.

APPROACH TO AIDING THE DEVELOPMENT AND TRAINING OF THE CHILD WITH CEREBRAL DYSFUNCTION

William P. Argy, Sr., M.D., Medical Director, D. C. Society for Crippled Children

PERMANENT TRANSVENOUS CARDIAC PACING

Nicholas P. D. Smyth, M.D., John M. Keshishian, M.D., James M. Bacos, M.D., and Sander H. Mendelson, M.D., Washington Hospital Center

MEDICAL AMELIORATION OF G-110 CYTOGENETIC ANOMALIES

Henry Turkel, M.D., Detroit, Mich.

A THERAPEUTIC COMMUNITY IN A TEACHING HOSPITAL

Angelo D'Agostino, M.D., Associate Professor of Psychiatry, George Washington University School of Medicine

TYMPANIC TEMPERATURE

Theodor H. Benzinger, M.D., D.Sc., and Maria Benzinger, M.D., District of Columbia General Hospital

METROPOLITAN WASHINGTON REGIONAL MEDICAL PROGRAM

Technical Exhibits

Exhibit Hall Will Be Open Wednesday and Thursday, 9 A.M. to 5 P.M.;
Friday, 9 A.M. to 12 Noon

The following companies will be represented in the Technical Area. They have items of interest to display and to discuss with you. A visit to each booth is suggested.

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ACKNOWLEDGMENT: The Medical Society of the District of Columbia gratefully acknowledges the contribution of the Joseph E. Jones Agengy, Mutual of Omaha Insurance Company toward the printing of the Official Program.

Special Events

(All Functions at the Washington Hilton Hotel)

Wednesday, September 9, 1970

ANNUAL SOCIETY LUNCHEON

12 Noon—International Ballroom East

Greetings from the American Medical Association by

Walter C. Bornemeier, M.D., President

Presentation of Society Awards

Free tickets available for members at Advance Registration or at Assembly Registration Desk

Thursday, September 10, 1970

GEORGETOWN UNIVERSITY MEDICAL ALUMNI LUNCHEON

12 Noon—Georgetown Ballroom

Master of Ceremonies: **John C. Rose, M.D.**

Dean, Georgetown University School of Medicine

Speaker: **Vernon E. Wilson, M.D.**

Administrator, Health Services and Mental Health Administration, Department of Health, Education, and Welfare

Tickets ($6.00) available at Alumni Office or at Assembly Registration Desk

GEORGE WASHINGTON UNIVERSITY MEDICAL ALUMNI LUNCHEON

12 Noon—International Ballroom West

Speaker: To be announced

Tickets available at Alumni Office or at Advance Registration:Desk

UNIVERSITY OF MARYLAND MEDICAL ALUMNI LUNCHEON

12 Noon—Hemisphere Room

Speaker: To be announced

Tickets are available at the Alumni Association, Lombard and Greene Sts., Baltimore Md. 21201

WOMAN'S AUXILIARY LUNCHEON

12 Noon—Lincoln Room

Speaker: **Mrs. R. C. L. Robertson**

President, Woman's Auxiliary to the American Medical Association

Tickets available at Assembly Registration Desk

PHYSICIANS' AND OFFICE STAFF RECEPTION AND DINNER

6:30 P.M.—International Ballroom East

Reception, courtesy of Russell, Marsh & Kennedy, Inc.

Tickets ($10.00) available at Advance Registration or at Assembly Registration Desk

(*Continued on page 458*)

Friday, September 11, 1970

ANNUAL RECEPTION AND DINNER DANCE

7:00 P.M.—Reception—Lincoln Room

Courtesy of Chas. Pfizer & Co., Inc.

8:00 P.M.—Dinner Dance—International Ballroom East

Dress: Black Tie

Tickets ($15.00) available at Advance Registration or at Assembly Registration Desk

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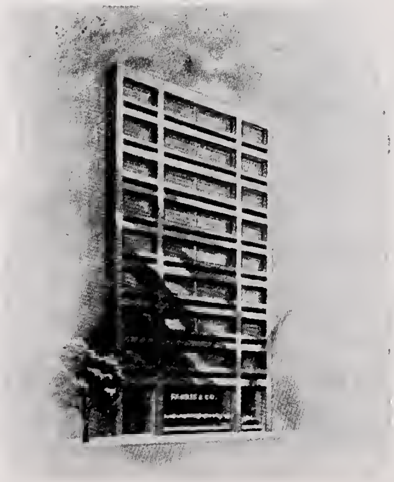

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History of the Medical Society
of the
District of Columbia

CHAPTER II

" . . . Promoting and Disseminating . . . Medical Knowledge"

ALTHOUGH THE ELIMINATION OF QUACKS and irregular practitioners which plagued Washington was given as a reason for incorporating The Medical Society of the District of Columbia in 1819, the Charter specifically stated that one of its primary functions was disseminating medical knowledge to its members. This was reiterated in the 1838 Charter.

Minutes of the Medical Society prior to 1838 were either lost or destroyed by fire, and even for many years thereafter titles of essays presented by members were not mentioned. There is no reason to doubt that scientific programs were given, although the minutes were limited to the names of those present, elections, and other organization matters. The first mention of a paper being read was on March 14, 1864, when Dr. F. R. Hagner addressed the group on "Vaccination." Thereafter scientific programs were incorporated in the minutes.

It was at a meeting about this time that the President of the Medical Society was authorized to appoint essayists from among the members. It was also decided during the month of December that the President should deliver his annual address. Of historical interest was a paper given by Dr. R. K. Stone, on March 3, 1865, on the death of President Lincoln and the results of the autopsy. On December 20, 1865 Dr. Joseph M. Toner read a paper which has been considered by historians as valuable source material. It was entitled "The History of the Medical Profession of the District of Columbia."

In the years that followed many physicians of national eminence addressed the Medical Society. Some of them were Sir William Osler, Dr. Walter Reed, Dr. Abraham Jacobi, Dr. E. M. Gallaudet (President of the Deaf-Mute College), Dr. W. C. Gorgas (Assistant Surgeon General of the U.S.A.), Dr. W. C. Borden, later Dean of George Washington University School of Medicine, and Dr. George M. Kober, Dean of the Georgetown University School of Medicine.

Shortly after the turn of the century the colorful Dr. John B. Murphy of Chicago and Dr. W. F. Grenfell of Labrador fame were among the "visiting firemen." Later there were Dr. Hugh H. Young, Professor of Urology at Johns Hopkins, Dr. Walter E. Dandy, Clinical Professor of Neurosurgery at the same institution, Dr. H. L. Bockus, and Dr. Elliott Joslin. Especially popular with the Washington physicians in the 1930's and 1940's were Dr. L. A. M. Krause, Assistant Professor of Medicine at the University of Maryland Medical School, Dr. W. C. Alvarez, Mayo Clinic, and Dr. Frank H. Lahey of Boston.

Without question Dr. Lahey was a most eloquent and articulate lecturer during the height of his career. He was always greeted by a packed auditorium in the Medical Society's building, which had a seating capacity of nearly 500. Physically he was on the small side. However, he was a giant on the platform. Privately he seemed shy, but when speaking on surgery he commanded the closest attention of his listeners. Physicians who were ordinarily not attentive sat riveted in their seats lest they should miss something that Dr. Lahey had to say. Surprisingly, Dr. Lahey lost some of his assurance when speaking on a subject not in his field.

One of the highlights of 1945 was the appearance of Sir Alexander Fleming, who addressed the Medical Society on "The Story of Penicillin." A slight, white-haired man, Fleming was extremely shy. At a press conference he was scornful of some of the questions asked him, which admittedly bordered on the inane. Fleming paid Washington another visit in 1950 when he toured the Food and Drug Administration, the Naval Medical Center, and the George Washington University School of Medicine. At the last two institutions he was the guest of Dr. Monroe Romansky of the Medical School's faculty.

Washington had its quota of distinguished physicians, some of whom had international reputations. Their contributions to the scientific programs are recorded in the *Medical Annals of the District of Columbia.*

Wednesday Night Meetings and the Assembly

The origin of the Medical Society's custom of holding scientific meetings on Wednesday nights is uncertain. However, a copy of the Medical Register for the District of Columbia published in 1867 contains a roster of physicians and a schedule of meetings which were held on Wednesday nights. This would seem to indicate that they had been held on this night prior to 1867.

Following the erection of the Medical Society's building at 1718 M Street, N.W. the Wednesday night tradition was adhered to with the exception of the first Wednesday of the month, which was devoted to the Society's business affairs. Prior to World War II most members set Wednesday night aside for the meetings of the Medical Society, and by and large the attendance was excellent.

Because of the absence of several hundred physicians from Washington during World War II the Wednesday night meetings were reduced from three to two a month. Business meetings were held quarterly, then semi-annually, and eventually annually. This development was due not only to the War and the absence of so many physicians but in part to the modernization of the Society's program.

There was fair attendance at scientific meetings during World War II despite the blackout in effect in Washington. As will be described later, attendance was not an inviting prospect to Wednesday-nighters, but they came out in good numbers despite wartime restrictions.

At the War's close it became apparent that Wednesday night meetings would soon be a thing of the past. However, officers of the Medical Society were reluctant to capitulate, and to begin with they refused to discontinue these meetings entirely.

Perhaps the most significant development during this period was the trend toward specialization. Sections of the Society in the specialties increased from 5 in 1938 to 14 in 1962.

Another development was the increased activity of 30 special medical societies following the return of physician-veterans. Quite a few of these had been only social organizations, but now they offered scientific programs presented by their members. This contributed to further reduction of attendance at the general Medical Society meetings.

Anxious to aid the returning physician-veterans, George Washington University and Georgetown University Schools of Medicine offered refresher courses in the specialties and in general practice. The Medical Society had considered itself as the primary source of education for the practicing physician. However, medical schools now became involved in what they considered their field.

Another indication of the changing medical scene was the increasing number of medical staff meetings at hospitals, with mandatory attendance of members of the staff. Some hospitals employed full-time directors of medical education, and this further removed a number of those who had attended the Medical Society meetings.

The Wednesday-night meetings were finally abandoned in 1951 when the average attendance was only 134 out of a membership of 1,743. They were replaced by the Midwinter Seminars, postgraduate courses, and the Annual Scientific Assembly, about which more will be said later.

The Medical Society parted with the traditional Wednesday-night meetings reluctantly. Its facilities, especially its auditorium, had been planned for sizable meetings. Now it entered upon a period when the auditorium was not used except at long intervals.

In 1959 an invitation was extended by the Society to the deans of the medical schools to discuss a coöperative educational program for practicing physicians. The meeting was held and gave promise of worthwhile results. The Medical Society's Committee on Postgraduate Education was reactivated. Two members of the Society who were on the faculties of the medical schools represented their institutions. Hospitals were also represented.

An effort was made to avoid duplication of meetings and subjects. Progress was slow, and by 1962 the situation had not changed materially.

Annual Scientific Assembly

Undoubtedly the most successful educational project undertaken by the Medical Society was the Annual Scientific Assembly. Undertaken at the suggestion of Dr. Charles Stanley White in 1929, the Assembly was held in the Medical Society's building for the next decade. Attractive as the Medical Society building was, it was not large enough, except for its auditorium, to meet the needs of what was becoming a full-scale State medical society meeting. For example, there was no satisfactory place for scientific exhibits except in the library and a dank basement. Expansion in these circumstances was impossible.

Upon the urging of the new full-time executive officer of the Society, the Executive Board, in 1939, voted with some trepidation to remove the Assembly to the Mayflower Hotel. A portion of the hotel's meeting rooms and the Grand Ballroom were used for scientific meetings and luncheons. Scientific exhibits were set up in the rooms off the Promenade, and the Promenade was used for technical or commercial exhibits.

The first Assembly held outside the Society's building proved so successful from a scientific and financial standpoint that it was never again held in the Medical Society's building. The Assembly was continued at the Mayflower Hotel until 1944, when, because of fire regulations, it was forced to be moved to the Hotel Statler where conditions for conventions proved ideal. All the rooms on the Mezzanine floor were engaged for the 3-day meeting.

Attendance of physicians at the Assembly, which had been less than 900 in 1939, increased to 1,700 in 1952. It has varied somewhat in the years since then, but the average attendance of physicians has never been below 1,300. Interns, medical students, and those engaged in ancillary services are not included in these figures. The total attendance in the late 1940's and the 1950's exceeded 2,500.

The Assembly was no longer a meeting confined to the District of Columbia; invitations were extended to all physicians in Virginia and Maryland and some parts of West Virginia, North Carolina and Pennsylvania. Groups of physicians came from various places and were invariably enthusiastic about the meeting.

The quality of the scientific programs offered was highly praised by those in attendance. Although Washington physicians were well represented on the program, there were many distinguished visitors. Among them were Dr. Henry L. Bockus, Professor of Gastroenterology at the University of Pennsylvania Graduate School; Dr. Russell Cecil of New York; Dr. Paul Dudley White, of Boston; Dr. T. Clarence Rowtley, Consulting General of the World Medical Association, Past President of the British Medical Association and Past President of the Canadian Medical Association; and Dr. Owen H. Wangensteen, Professor of Surgery at the University of Minnesota Medical School.

In the last year of World War II (1945) the Assembly was cancelled by direction of the Committee on Wartime Conventions of the Office of Defense Transportation. The country's railroads were still heavily burdened with the war effort.

The Society and the Medical Society of Virginia sponsored the first Interstate Scientific Assembly at the Shoreham Hotel in 1954. Because the Southern Medical Association was having its annual meeting in Washington it was decided not to hold the 1956 Assembly. Joint committees representing both organizations developed the program for the scientific program, which was enthusiastically received. The same thing was true when the AMA Clinical Meeting was held in Washington in 1960.

A feature of the Assembly for several years was the Public Meeting. Appearing on the programs were many widely known public figures and eminent medical men. Among them were the following: The Honorable Fiorello Laguardia, of New York, U. S. Director of Civilian Defense and former Mayor of New York; House Majority Leader Joseph W. Martin, Jr., who spoke on "Socialized Medicine"; the Honorable A. A. Berle, Jr., Assistant Secretary of State, on "Considerations of Health as Affecting Foreign Policy”; Dr. Harry Stack Sullivan, on “War—Nerves and the Public”; U. S. Senator William H. King of Utah on “Medical Preparedness”; Dr. Foster Kennedy, of New York; Dr. James C. Sargent, of Milwaukee, Clinical Professor of Urology at Marquette University School of Medicine, on “This Is Our Oath”; Captain George M. Lyon, MC, USNR, “Atomic Energy and Your Future Health”; the Honorable G. Howland Shaw, former Assistant Secretary of State, on “Our Youth Today,” with Marion Van Waters, Ph.D., George E. Gardner, Ph.D., and J. Edgar Hoover, Director of the FBI, discussants; “Science Writers Quiz the Doctor” with Dr. Howard B. Sprague, of Harvard University Medical School, speaker, Dr. Herbert P. Ramsey, Moderator, and a panel—Frank Carey of Associated Press, Gerald G. Gross of the *Washington Report on Medical Sciences*, Thomas Henry of the *Washington Evening Star*, and Ron Ross of *Science Service*.

Dr. Alex Steigman, Medical Consultant to the National Foundation for Infantile Paralysis, addressed the Public Meeting on “Polio—1949: Facts the Public Should Know”; Dr. G. D. W. Cameron, Deputy Minister of Health of Canada, spoke on “World Health Organization”; Dr. Richard Gerstel, on “You Can Survive an Atomic Attack”; and a panel discussion on the “3 R’s (Research, Reorganization and Rehabilitation) of Heart Disease,” Laurence Spivak, co-producer of Meet the Press, Moderator; Ken Johnson, former Governor of Kentucky and Past President of the Kentucky Heart Association, keynote speaker, and Dr. Robert W. Wilkins, Associate Professor of Medicine at Boston University; E. Cowles Andrus, Associate Professor of Medicine, Johns Hopkins; Myrna Loy, Member-at-large, U. S. National Commission to UNESCO; Ernestine Gilbreth Cary; and Watson Davis, of Science Service, panelists.

Because the Assembly was an ambitious undertaking, and much depends on the interest and ability of the General Chairmen, here is a list of those who have served in that capacity since the meeting was moved from the Medical Society building:

1939	James A. Gannon
1940	John A. Reed
1941	John R. Cavanagh
1942	Fred R. Sanderson
1943	Arnold McNitt
1944	Arnold McNitt
1945	Cancelled
1946	W. Ross Morris
1947	Robert H. Groh
1948	Robert H. Groh
1949	Robert J. Coffey
1950	Karl C. Corley*
1951	Leonard T. Peterson
1952	William J. Tobin
1953	Jonathan M. Williams
1954	Preston A. McLendon—First Interstate Scientific Assembly
1955	Alfred A. J. Den
1956	Joint Meeting—Southern Medical Association
1957	Alfred E. Brigulio
1958	Robert E. Moran
1959	Marcel J. Foret
1960	Donald Stubbs
1961	Seymour Alpert

Special mention should be made of the outstanding services of Dr. Russell J. Fields, Chairman of the Scientific Exhibit Committee when it was decided to transfer the Assembly from the Medical Society building to the Mayflower Hotel (1939). He showed unusual initiative and resourcefulness in the difficult transition. Dr. Fields served in the above capacity for the following five years.

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* Following Dr. Corley’s departure early in the year for service in Korea Dr. L. T. Peterson became Acting Chairman.

Seminars and Postgraduate Courses

As previously stated, upon abandonment of the Wednesday night meetings a 3-day Midwinter Seminar was substituted. The seminar speakers were to be confined to Washington physicians. On the whole, the new program was successful. It was presented annually from 1951 to 1961.

Not content with this effort, the Medical Society offered postgraduate courses in diagnosis, acute cardiac emergencies, vascular accidents of the extremities and the acute abdomen, with special reference to differential diagnosis, psychosomatic medicine, modern treatment of burns and fractures, the prevention of chemical casualties, office surgical procedures, psychoneurosis in general practice, syphilology, and disaster medicine; also Annual Lecture Series on emotional factors in illness, clinical application of the basic sciences, and viral rickettsial diseases. A symposium on "Early Ambulation and Rapid Rehabilitation of Hospitalized Patients" was also presented. Several closed-circuit television programs on scientific subjects presented in the Medical Society's auditorium should also be mentioned.

Teaching Techniques

A unique and highly successful Conference on Medical Teaching Techniques was held in the Medical Society's building, April 4 and 5, 1952. It was the brainchild of Dr. Hugh H. Hussey. Because of its uniqueness it had to be "sold" to the medical profession—and it was. Those who attended were most enthusiastic and certainly well rewarded.

Appearing on the program from outside Washington were: Dr. William Parsons, Professor of Medicine, University of Virginia; Dr. Morris Fishbein; Tom Jones, Professor of Medical and Dental Illustrations, University of Illinois; Warren Sturgis, President, Sturgis-Grant Productions of New York (producer of medical films); J. H. Henning, Head of the Department of Speech, West Virginia University College of Arts and Sciences; W. C. Davison, Department of Education, International Business Machines; Dr. Walter C. Alvarez, Editor, *Modern Medicine*; and Dr. Julian P. Price, Editor, *Journal of the South Carolina Medical Association*.

The Davidson Lecture

There were, in 1962, still a number of Medical Society members who recalled the stalwart Dr. Edward Young Davidson. To him, more than to any other member, goes the credit for the erection of the Society's building at 1718 M Street, N.W. At the time of its completion, in the early 1920's, it was one of the handsomest buildings in Washington, but more about that in a later chapter.

Dr. Davidson was not a man easily swerved from his goal. He talked about the building and little else for two or three years before it was built. He was determined to raise the money needed, and he did it over the protests of many physicians who begged him to desist.

Dr. Davidson had a four-square granite-like appearance. But this concealed a surprising sentimentality in his relationship with those he liked. On the other hand, he was a formidable foe and asked no quarter.

Deeply grateful members of the Medical Society had an impressive bronze plaque placed in the lobby of the Medical Society building which read:

THE DAVIDSON LECTURE

Established May 1, 1929 as an
enduring expression of
the gratitude of

THE MEDICAL SOCIETY OF THE DISTRICT OF COLUMBIA
TO EDWARD YOUNG DAVIDSON, M.D.

Who when President of the Society in 1916
Conceived and led to completion
The movement which provided this building

Later his friends had his portrait painted and it was hung in the Board room of the Medical Society.

Those chosen to give the Davidson Lecture considered it a great honor, which it was. The names of the Lecturers are as follows:

1931—Dr. William Hallock Park (New York City): “Antipoliomyelitis Serum in Horses and Human Beings and Its Use in the Prevention and Treatment of Poliomyelitis”
1933—Dr. Edwin A. Merritt: “X-ray Treatment of Bone Conditions Produced by Hyperparathyroidism”
1935—Dr. George C. Ruhland, Health Officer of D. C.: “The Newer Public Health”
1937—Dr. Harry A. Davis: “Factors in the Production and Treatment of Shock: An Experimental Study”
1939—Dr. Walter Freeman: “The Surgical Treatment of Mental Disorders”
1941—Dr. Robert J. Coffey: “Recent Advances in Diseases of the Pancreas”
1943—Dr. Walter Freeman: “Frontiers of Multiple Sclerosis”
1945—Dr. Joseph T. Roberts: “The Role of the Small Vessels and Nerves of the Heart in Heart Failure, Coronary Artery Thrombosis and Cardiac Pain”
1947—Dr. O. Hugh Fulcher: “Cranioplasty: A Technique with Tantalum”
1949—Dr. Arthur A. Morris: “The Surgical Treatment of Psychomotor Epilepsy”
1951—Dr. Jonathan M. Williams: “The Amygdaloid Nucleus; a Clinical Study of Its Bilateral Ablation and a Theory as to Its Function”
1953—Dr. George E. Schreiner: “The Physiology of Arteriovenous Fistulas”.

In 1955 the Lecture was omitted and the Davidson Award took its place. The first Award was given to Dr. Sol Katz for a paper on the “Chemotherapy of Tuberculosis.” The Award became the Davidson Lecture on Religion and Medicine. The first lecture in this series was given in 1961 by Dr. Frank J. Sladen and the second in 1962 by Dr. Erich Lindemann.

The Kober Lecture

One of the outstanding physicians in Washington's medical history was Dr. George M. Kober, former Dean of the Georgetown University School of Medicine. He made an endowment which made possible the Kober Lectures, all of them given under the auspices of Georgetown University. Selection of Lecturers is made triennially by the Executive Board of the Medical Society, the Association of Military Surgeons of the United States, and the Association of American Physicians. Continued interest in the Lecture, which originated in the 1920's, is due largely to Dr. William P. Herbst, a former President of the Medical Society of the District of Columbia and a nephew of Dr. Kober. Another nephew in the District was Dr. Harry Zehner, Sr.

The following essayists were chosen by the Medical Society to give the Kober Lectures:

1926—Dr. Oscar B. Hunter, Assistant Dean of George Washington University School of Medicine and Pathologist-in-Chief at the George Washington University Hospital and Dispensary
1929—Dr. William A. White, Superintendent of St. Elizabeths Hospital
1932—Dr. Ales Hrdlicka, Curator, Division of Physical Anthropology, U.S. National Museum, Smithsonian Institution
1935—Dr. Laurence S. Otell, Associate Professor of Radiology, Georgetown University School of Medicine
1938—Dr. Wallace M. Yater, Professor and Director of the Department of Medicine, Georgetown University School of Medicine
1941—Dr. John R. Mohler, Chief of the Bureau of Animal Industry
1947—Dr. Thomas Parran, Surgeon General of the United States Public Health Service
1950—Dr. Brian Blades, Professor of Surgery, George Washington University School of Medicine
1953—Dr. William P. Herbst, Professor of Clinical Urology (1935–46) and Professor of Urology (1946–48), Georgetown University School of Medicine, and Chief of the Urological Service, Georgetown University Hospital (1946–48)
1956—Dr. Harry S. Bernton, Emeritus Professor of Preventive Medicine, Georgetown University School of Medicine
1959—Dr. Charles A. Hufnagel, Professor of Surgery, Georgetown University School of Medicine
1962—Dr. Zigmond M. Lebensohn, Clinical Professor of Psychiatry, Georgetown University School of Medicine

Medical Schools and Hospitals

The Medical Society is indebted to the Deans of the District Medical Schools and their faculties for their coöperation in developing scientific programs for the Medical Society. Mention should be made especially of the assistance given by Dr. Walter A. Bloedorn (1938–1957), former Dean, and Dr. John L. Parks (1957—), his successor, at the George Washington University School of Medicine; Dr. Francis M. Forster, Dean of Georgetown University School of Medicine (1953–1958) and Dr. Hugh H. Hussey, his successor (1958–1962); and Dr. Robert S. Jason, Dean of Howard University College of Medicine (1955–).

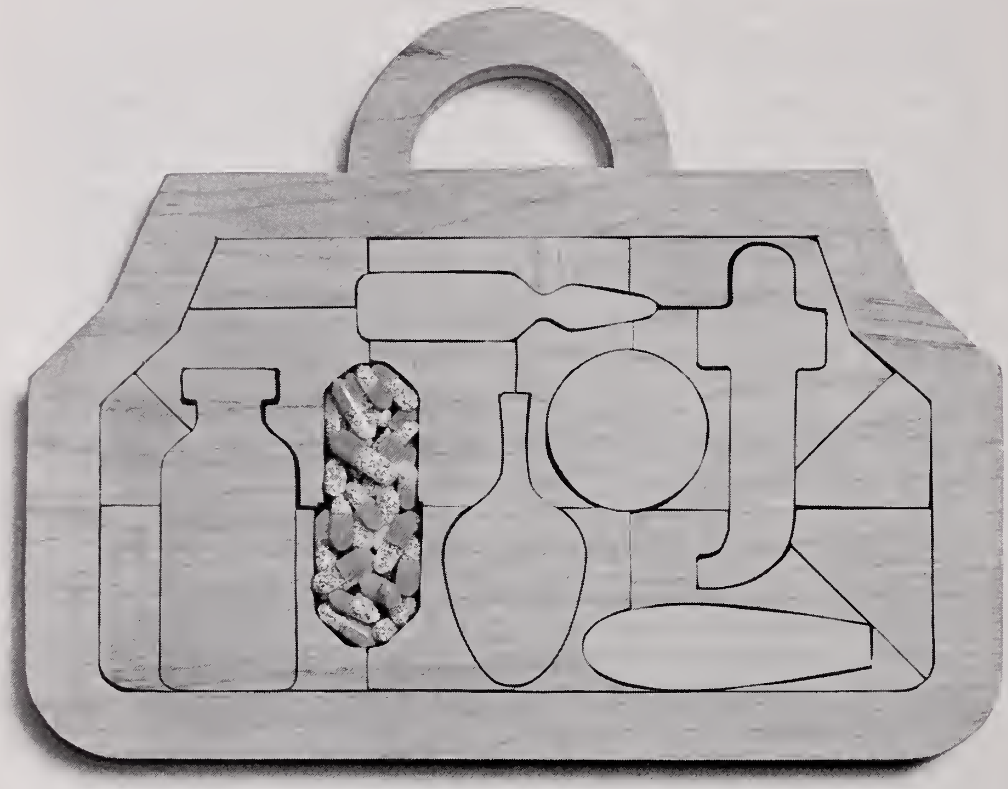
All of the medical schools in Washington made tremendous strides in the 1940's and 1950's, strengthening their full-time faculties with able medical educators. Hospital facilities, too, which had been in such a deplorable state in the latter 1930's, kept pace with medical progress.

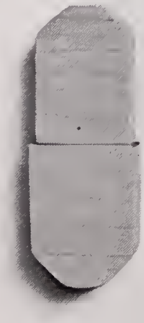
Ancient structures, such as Garfield, Episcopal Eye, Ear and Throat, and Emergency hospitals, were combined in the largest of the District's medical institutions, the Washington Hospital Center. Both George Washington and Georgetown Universities acquired impressive new hospital buildings. Sibley Hospital, long situated in an old section of Washington, purchased a beautiful site in Northwest Washington and built one of the City's finest hospitals. Doctors Hospital was erected in the downtown area in the latter 1930's with private funds. Since the erection of its building it has been highly successful. Additions were added at Casualty Hospital (now named the Rogers Memorial Hospital) to meet the demands of this area. Other hospitals have come into existence since 1962.

The vast expansion of Government facilities, such as the National Institutes of Health, is a story in itself. It is sufficient to say that this development alone has done much to make Washington a world medical center.

Medical Conventions

Washington attracted more medical conventions in the last two decades than in all its previous history. Many of these have been sponsored by organizations of specialists who wished to take advantage of the facilities of the medical institutions in the City and its environs.





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HEALTH DEPARTMENT NOTES

Medical Records at D. C. General Hospital

For every patient treated at D. C. General Hospital a complete medical record is maintained. In fiscal year 1969, 195,321 patients visited the Hospital's Outpatient Clinics, 103,603 were treated in the Emergency Room, and 22,883 persons received inpatient treatment. During a 12-month period more than 320,000 records were processed, every one of them of vital importance to the individual patient.

Approximately 300,000 active records are on file at D. C. General Hospital on any given day. Each day approximately 400 to 500 medical records are forwarded to Outpatient Clinics; about 300 are pulled for patients treated in the Emergency Room; and about 750 are in continued use on the inpatient floors.

Medical records for both in-and-out patients are filed in the Hospital's Medical Records Section. Assuming a medical record is in the Hospital's files and has not been sent to storage, it is pulled upon request of the patient's physician. For outpatients, medical records are delivered to the clinics the day prior to appointments. Medical Records' personnel presently are seeking a solution to the problem which arises when an outpatient has several clinic appointments in one day. Neighborhood health clinics may request records of a patient formerly treated at D. C. General Hospital and, in such cases, the Medical Records Section will forward photocopies on request. This procedure is reversed if a clinic patient comes to D. C. General Hospital.

If 5 years have elasped since the patient was treated at D. C. General Hospital, his medical records will have been sent to the Federal Records Center at Suitland, Maryland, to remain for an additional 15 years. However, when the need arises medical records may be withdrawn, and approximately 20 times a month such withdrawals are made. If the patient is in an acute emergency category, a messenger will be sent to the Suitland facility to obtain the record. Otherwise it may take 2 or 3 weeks for it to arrive.

The Medical Records Section retains an alphabetically arranged master file of persons treated at the Hospital, which provides corresponding patient file numbers, dates of birth, and records of earlier treatment diagnoses. Armed with information from the master file, physicians may find that records stored at the Federal Records Center are not necessary. The Patient File Number Nerve Center at the Hospital also serves as a double check on the alphabetical master file.

The patient's medical record begins with registration in the Emergency Room when an Emergency Treatment Record is initiated. Upon admission to the Hospital, the Emergency Treatment Record (ETR) is sent to the ward with the patient. There the junior resident records admitting notes and his impression of the patient's health problems. If the patient has previously been treated at D. C. General Hospital his records are ordered from the Medical Records Section. The earlier medical charts may confirm the resident's impression or may dictate a change as well as prevent the possiblity of an incompatible course of treatment.

An intern records the patient's medical history and findings of the physical examination, signing his entries, which are countersigned by the resident. Treatment plans, progress notes, orders for medications and for specific treatments, such as physical therapy, are entered and signed by the attending physician. He also may enter and sign a request for consultation on the case.

Concurrently, nurses note and sign for nursing plans, and care is provided accordingly. Entries also are made on the medical records by clinical social workers and therapeutic dietitians, and signed, if they have been requested to join in the course of treatment. Reports of X-ray and laboratory technicians are forwarded to the Medical Records Section for entry on the individual charts.

When submitted for filing, a properly completed medical record or chart should include the following items where applicable, each signed by the responsible member of the treatment team: final diagnosis, summary, transfer diagnosis and summary, death note, autopsy note, birth certificate, operation report including date and name of surgeon, anesthesia report, pathology report, and condition at time of discharge.

In the Medical Records Section the medical chart goes first to assembly personnel, who arrange the papers in proper order. The coding section then analyzes each folder for deficiencies and codes the records according to the International Classification of Diseases Adapted. Guidelines of the Joint Commission on Accreditation of Hospitals for the development of medical records are followed. At this point about 30 per cent of the medical records are set aside for the correction of deficiencies, which may range from missing signatures to incomplete diagnoses. The attending physician on the cases represented by these records is asked to come to the Medical Records Section where he may work in one of the specially designed booths. Each booth is equipped with a telephone over which the physician may talk to the Central Dictation Pool and on which he may be paged. When all missing entires have been filled in, the medical record is rechecked by the coding section, then passed on for filing.

The Medical Records Section reports to the Tumor Registry on the treatment of any patients for tumors or other neoplasms. The Registry in turn provides information on patients who may have been treated elsewhere for a cancer problem.

In the case of a deceased patient, medical records accompany the body to the Hospital's Pathology Division, then are sent to Medical Records for filing.

Audits of medical records are made on an annual basis by Group Hospitalization, Inc. The Utilization Review Committee, composed of hospital medical staff members, carries out audits, on a monthly basis, of every twenty-fifth record. The charts audited by the Committee are first reviewed by the Medical Records Librarian, who also assists the Committee in its audits.

The Medical Records Committee, also drawn from the medical staff, each month reviews charts which present peculiar or unusual problems. For instance, if the medication recommended in a number of similar cases has produced an undersirable side-effect, these cases will be evaluated to determine if the dosage should be changed or the medication removed from the drug formulary.

As a result of the emphasis upon prompt and complete entries, checking of each record before filing, and constant review and auditing, patients at D. C. General Hospital are assured of care which takes into account all factors which may have any bearing on their health problems. Hospital authorities constantly stress the importance of carrying a Medicaid or Medicare card or identification card showing Patient File Number, date of birth, and medical school service. These cards, shown at the time of registration, help to provide earlier health care records for patients and, consequently, more rapid development of a course of treatment.

Raymond L. Standard, M.D., M.P.H.
D. C. Director of Health Services Administration

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*An estimated 208,000 patients have received GARAMYCIN Injectable to date. The combined population of Alexandria, Va., and Silver Spring, Md., is 199,500. (Estimated 1969 figures from The New York Times Encyclopedic Almanac 1970.)

See Clinical Considerations section on last page...

Injectable Garamycin®
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ADULT DOSAGE GUIDELINES

See definitive prescribing information in Package Insert.

Patients with Normal Renal Function

Total Daily Dose (administered in two, three, or four divided doses)

	Less Severe	Resistant/ Moderately Severe	Serious/Life-Threatening
Urinary Tract Infections (due to susceptible strains of gram-negative bacteria)†	0.8-1.2 mg./kg. for 7-10 days	Larger doses or additional antibacterial therapy should be considered in severe urinary tract infections or in resistant cases involving the renal parenchyma or anatomic anomaly.	up to 5 mg./kg.
Other Infections including bacteremia, infected surgical wounds, severe soft tissue infections, and respiratory tract infections (due to susceptible strains of gram-negative bacteria)	3 mg./kg. for 7-10 days		

†Alkalinization of the urine may be a useful therapeutic adjunct.

Patients with Impaired Renal Function

To minimize the risk of ototoxicity in patients with impaired kidney function, only the first dose should be that normally recommended. Each subsequent dose should be half or less of that recommended for patients with normal renal function, depending upon the degree of renal impairment.

In patients with renal failure who are undergoing 14-hour hemodialysis twice weekly, administration of 1 mg./kg. GARAMYCIN Injectable at the end of each dialysis period has been suggested.

Clinical Considerations

Indications: GARAMYCIN Injectable is clinically effective in infections due to susceptible strains of gram-negative bacteria, including *Pseudomonas aeruginosa*, and species of indole-positive and indole-negative *Proteus*, *Escherichia coli*, and *Klebsiella-Aerobacter*. Bacteriologic studies should be conducted to identify the causative organism and to determine its sensitivity to gentamicin sulfate. Sensitivity discs of the drug are available for this purpose. If the susceptibility tests indicate that the causative organism is resistant to gentamicin sulfate, other appropriate antibiotic therapy should be instituted.

IN VITRO INHIBITION OF CLINICALLY IMPORTANT BACTERIA BY GENTAMICIN SULFATE (TUBE DILUTION STUDIES)

BACTERIA	No. of Strains Tested	No. of Strains (%) Inhibited by: 4 mcg./cc. or less		8 mcg./cc. or less*		No. of *In Vitro* Studies
Staphylococcus aureus	1,210	1,200	(99%)	1,206	(99%)	11
Pseudomonas aeruginosa	885	771	(87%)	828	(93%)	16
Escherichia coli	836	736	(88%)	779	(93%)	11
Indole-positive and indole-negative *Proteus* species	477	210	(44%)	358	(75%)	12
Klebsiella-Aerobacter species	292	205	(70%)	231	(79%)	10

*Number of strains (%) of gram-negative bacteria inhibited by 10 mcg./cc. or less are as follows: *Pseudomonas aeruginosa*, 828 (93%); *Escherichia coli*, 792 (95%); *Proteus* species, 393 (82%); *Klebsiella-Aerobacter* species, 284 (97%). From same studies as above.
Source: Package Insert

This drug should be limited to the treatment of serious infections caused by gram-negative bacteria, particularly *Pseudomonas aeruginosa*, *Proteus* and other susceptible organisms, with due regard for relative antibiotic toxicity. Therefore, the drug should be considered for use against gram-negative: 1. Bacteremia; 2. Infected surgical wounds; 3. Severe soft tissue infections, including burns complicated by sepsis; 4. Respiratory tract infections; and 5. Selected cases of urinary tract infection.

Contraindications: GARAMYCIN Injectable is contraindicated in i dividuals with a history of hypersensitivity or toxic reactions gentamicin.

Warnings: Patients receiving treatment with GARAMYCIN should be under close clinical observation because of the toxicity associated with the use of this drug. Ototoxicity, vestibular and auditory, can occur in patients, primarily those with preexisting renal damage, treated with GARAMYCIN Injectable, usually for longer periods or with higher doses than recommended.

GARAMYCIN Injectable is potentially nephrotoxic, and this should be kept in mind when it is used in patients with preexisting renal impairment. Kidney function diminished by infection of the upper urinary tract may, however, improve during effective treatment with GARAMYCIN Injectable.

Concurrent administration of potentially ototoxic drugs such as streptomycin and kanamycin or of potentially nephrotoxic drugs such as polymyxin, colistin, and kanamycin with gentamicin sulfate has not been shown to afford any clinical advantages and, moreover may result in additive toxicity. Monitoring of vestibular, cochlear, and renal function will provide guidance for therapy in such cases.

Precautions: In patients with impaired renal function in who serious infection develops, serum concentrations of the drug m rise, with consequently increased risk of ototoxicity. In these p tients or in those in whom recommended dosage or duration therapy must be exceeded as a life-saving measure, routine studi of kidney function should be performed when possible. These m be supplemented by evaluation of the vestibular and auditory fun tion and measurement of serum concentration of the drug wh feasible. Serum concentrations of gentamicin should be maintain below the range of 10-12 mcg./ml. to reduce risk of ototoxicity.

Ordinarily, treatment should not be given for more than 7 to days or be repeated unless required for serious infection not sponsive to other agents.

As with other antibiotics, treatment with GARAMYCIN Injectab may occasionally result in overgrowth of nonsensitive organisms. superinfection occurs, appropriate therapy is indicated.

Safety for use in pregnancy or the potential for fetal ototoxicity nephrotoxicity have not been established. Studies in pregnant a mals have not revealed teratogenic or ototoxic effects in the fet GARAMYCIN Injectable should not be used in pregnant patients in women of childbearing age unless its use is deemed advisa by the physician.

Adverse Reactions: The overall incidence of ototoxicity consider related to treatment with GARAMYCIN Injectable was 2.8 per c (16 of 565 patients). Contributory factors (two or more factors w relevant to most patients) were as follows: 10 had azotemia, received a total of 1 gram or more of the drug, 7 had recently ceived other potentially ototoxic antibiotics (streptomycin or ka mycin), and 5 were over 60 years of age. Six also had decreas high-tone hearing acuity, which returned to or toward normal the 4 patients retested.

Analysis of BUN data indicated that 4 (2%) of 172 patients show increases in BUN that were probably related to treatment w GARAMYCIN Injectable. Of 20 increases probably or possibly rela to treatment, 7 were reversible, 9 occurred in terminal patients, a 4 had no follow-up.

Other adverse reactions associated with treatment were one insta each of urticaria, decreased hematocrit, and reversible depressi of granulocytes with normal bone marrow. Other rarely report and possibly treatment-related adverse reactions were anemia, creased reticulocyte count, rash, purpura, drug fever, hypotensi convulsions, twitching, salivation, nausea, vomiting, increased tra aminase activity (SGOT or SGPT), increased serum bilirubin, creased serum calcium, and joint pain.

Packaging: GARAMYCIN Injectable, 40 mg./cc., 2-cc. multiple-d vials, for intramuscular administration.

For more complete prescribing details, consult package insert Physicians' Desk Reference. Schering literature is also availa from your Schering Representative or Medical Services Departme Schering Corporation, Union, New Jersey 07083.

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S-

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(continuous release form)

(diethylpropion hydrochloride)

works on the appetite not on the 'nerves'

When girth gets out of control, TEPANIL can provide sound support for the weight control program you recommend. TEPANIL reduces the appetite—patients enjoy food but eat less. Weight loss is significant—gradual—yet there is a relatively low incidence of CNS stimulation.

Contraindications: Concurrently with MAO inhibitors, in patients hypersensitive to this drug, in emotionally unstable patients susceptible to drug abuse

Warning: Although generally safer than the amphetamines, use with great caution in patients with severe hypertension or severe cardiovascular disease Do not use during first trimester of pregnancy unless potential benefits outweigh potential risks

Adverse Reactions: Rarely severe enough to require discontinuation of therapy. unpleasant symptoms with diethylpropion hydrochloride have been reported to occur in relatively low incidence. As is characteristic of sympathomimetic agents, it may occasionally cause CNS *effects* such as insomnia, nervousness, dizziness, anxiety, and jitteriness. In contrast, CNS depression has been reported. In a few epileptics an increase in convulsive episodes has been reported. Sympathomimetic *cardiovascular effects* reported include ones such as tachycardia, precordial pain, arrhythmia, palpitation, and increased blood pressure. One published report described T-wave changes in the ECG of a healthy young male after ingestion of diethylpropion hydrochloride; this was an isolated experience, which has not been reported by others. *Allergic phenomena* reported include such conditions as rash, urticaria, ecchymosis, and erythema. *Gastrointestinal effects* such as diarrhea, constipation, nausea, vomiting, and abdominal discomfort have been reported. Specific reports on the hematopoietic system include two each of bone marrow depression, agranulocytosis, and leukopenia. A variety of miscellaneous adverse reactions have been reported by physicians. These include complaints such as dry mouth, headache, dyspnea, menstrual upset, hair loss, muscle pain, decreased libido, dysuria, and polyuria

Convenience of two dosage forms: TEPANIL Ten-tab tablets One 75 mg tablet daily, swallowed whole, in midmorning (10 a m); TEPANIL One 25 mg tablet three times daily, one hour before meals. If desired, an additional tablet may be given in midevening to overcome night hunger Use in children under 12 years of age is not recommended

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Painful night leg cramps...

unwelcome bedfellow for any patient– including those with arthritis, diabetes or PVD

One thing patients can sleep without, particularly patients with chronic disease conditions such as arthritis, diabetes or PVD, is painful night leg cramps. Although seldom the presenting complaint, night leg cramps can tie your patients up in painful knots. Now, just one tablet of QUINAMM at bedtime can usually bring an end to shattered sleep and needless suffering. Your patients will sleep restfully—gratefully—with QUINAMM, specific therapy to prevent painful night leg cramps.

Prescribing Information—Composition: Each white, beveled, compressed tablet contains: Quinine sulfate, 260 mg., Aminophylline, 195 mg. **Indications:** For the prevention and treatment of nocturnal and recumbency leg muscle cramps, including those associated with arthritis, diabetes, varicose veins, thrombophlebitis, arteriosclerosis and static foot deformities. **Contraindications:** QUINAMM is contraindicated in pregnancy because of its quinine content. **Precautions/Adverse Reactions:** Aminophylline may produce intestinal cramps in some instances, and quinine may produce symptoms of cinchonism, such as tinnitus, dizziness, and gastrointestinal disturbance. Discontinue use if ringing in the ears, deafness, skin rash, or visual disturbances occur. **Dosage:** One tablet upon retiring. Where necessary, dosage may be increased to one tablet following the evening meal and one tablet upon retiring. **Supplied:** Bottles of 100 and 500 tablets.

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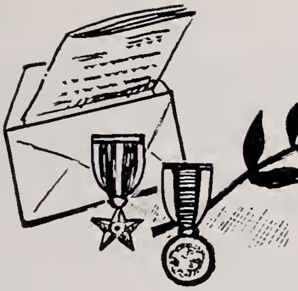
(quinine sulfate 260 mg., aminophylline 195 mg.)



News & Personals

Summary of Executive Board Actions

Proceedings of June 15 Meeting

Dinner was served for Board members in the Exhibit Hall of the Medical Society. Present were Drs. Robert J. Coffey, Chairman, Henry D. Ecker, William S. McCune, Frank S. Pellegrini, Marvin C. Korengold, Howard Katzman, James E. Boland, John J. Hughes, C. Willard Camalier, Jr., and Mr. Thomas Sadler, Secretary. Present by invitation were Dr. Arthur E. Wentz, Program Coördinator, Metropolitan Washington Regional Medical Program, and Miss Judith E. Perruso.

During the dinner Dr. Wentz presented a report on RMP activities; the report was accepted by the Board and Dr. Wentz was commended by Dr. Coffey for the presentation.

Dr. Coffey introduced Miss Perruso, newly appointed Assistant to the Editor of the Medical Annals, to the Board members and welcomed her to the Society.

The executive session of the Board was called to order at 7:40 p.m. by the Chairman.

The minutes of the May 18, 1970 meeting were approved as submitted.

Committee Meetings: The Secretary reported the following committees had met since the last meeting of the Board:

May 19 Grievance Committee
19 Ad Hoc Committee on Specialty Sections
20 Legislative Committee
21 Breast Cancer Study Committee
22 Committee on Public Welfare
22 Committee on Communicable Diseases
27 Committee on Occupational Health
June 2 Committee on Alcoholism
3 Fee Review Committee
3 Committee on Constitution and By-laws
4 Physician Placement Committee
5 Committee on Emergency Medical Services
9 Board of Credentials
15 Committee on Environmental Health

Board of Credentials: On recommendation of the Board of Credentials, 5 applicants were elected to Active membership and 5 to Associate membership. Their names appear on pages 476–477. Approval was given to the following changes in membership status:

Transfers

Active to Associate: Nancy K. France, Forest K. Harris, S. C. Jain, and Nina B. Woodside
Active to Special: Earl D. Neslen

Resignations

Active: D. R. Chitkara, Robert C. Hill, and Roberta A. Irish
Associate: Mitchell W. Spellman

Having fulfilled the requirements of the Constitution and By-laws, the following members were confirmed as Life members:

Victor R. Alfaro
James C. Cawood
W. LeRoy Dunn
Donald M. Harper
John F. Harrington
Raymond T. Holden, Jr.
Thomas J. Kelley
Michael F. Kennedy
David H. Kushner
William G. Lofton, Sr.
Margaret M. Nicholson
Alec A. Preece

As the first order of business, Dr. Coffey read to the Board a letter from Miss A. Louise Eckburg, who retires June 30 as Executive Editor of the Annals, stating her appreciation of "the very generous check you gave me." The Board expressed its pleasure at receiving her letter and highly praised the June 11 Testimonial Dinner given in her honor. A motion was made and carried that Dr. Zigmond M. Lebensohn be officially recognized for his very excellent development of the Testimonial Dinner.

Designees for Society's Annual Awards: Upon request the Board had received nominations for recipients of the Society's Annual Awards to be presented at the 1970 Scientific Assembly. It voted to accept the following recommendations of the Committee on Public Information and Education: A. H. Robins Community Service Award to Dr. James Bacos; the Certificate for Meritorious Service to Dr. Sol Katz; and the John Benjamin Nichols Award for laymen to Mr. William H. Gold

("Bill Gold"), who writes "The District Line" in The Washington Post. "Bill" has helped D. C. children tremendously through his fund-raising efforts for Children's Hospital.

Ad Hoc Committee on Abortion: Dr. Coffey stated that he had had a discussion recently with Dr. Robert E. Nelson, Chairman of this Committee, regarding the Board's action, April 27, on abortions. Following an expression of opinion by each Board member, the Executive Board reaffirmed its action taken April 27, 1970, on the subject of abortions.

Committee on Communicable Diseases: The Board voted to accept the recommendation of this Committee, that the Medical Society be the issuing agent for a "uniform stamp" which is required for the International Travel Certification of Vaccination. Mr. Sadler was instructed to work out details with Dr. John R. Pate of the D. C. Health Department.

Other Business

1. The Board voted to suspend Board meetings during July and August. During this period Board meetings will be called by the Chairman if urgent business requires them.

2. Upon the recommendation of the Committee on Emergency Medical Service, it was voted to send formal letters to the Police Department, the Fire Department, National Airport, and all other agencies concerned with MEDS (Medical Emergency Disaster Service) advising them that the on-site triage activities of the MEDS have been discontinued and that the Committee on Emergency Medical Service, through its liaison officers with the Medical Command Post, will work through the Medical Bureau to provide emergency physicians as the need arises.

3. The recommendation of Dr. Wallace M. Yater that Dr. J. Keith Cromer be appointed to the Editorial Board of the ANNALS was accepted. He will succeed Dr. Herbert P. Ramsey, who has resigned.

4. Dr. Camalier elaborated on the AMA proposal to increase its membership dues to $150 yearly. The Board agreed that our delegates should exercise their own good judgment when voting on this matter.

5. Dr. Camalier mentioned that California had submitted a resolution to be considered in June to set up a National Health Insurance Plan. He said that this is basically the same resolution that our Society introduced in 1964. The Board agreed that our delegates support this resolution.

6. The Board approved the recommendation of the Committee on Environmental Health that an educational program on lead poisoning be made available to physicians in the Washington Metropolitan Area. Such a program, to be developed by Dr. Clifton R. Gruver, will be submitted to the Board for approval.

7. Mr. Michael Eason, Society Accountant, was appointed to serve as a trustee representing the employees of the Society's Employee Retirement Plan. He succeeds Miss Eckburg.

There being no further business, the meeting was adjourned at 9:40 p.m.

NEW MEMBERS

Active

NELSON R. BLEMLY, M.D. Office: 4900 Massachusetts Avenue, N.W. Born in Wolcott, N.Y. Medical degree: University of Buffalo, 1949. Specialty: Radiology.

WILLIAM O. CRAWFORD, JR., M.D. Office: Georgetown University Hospital. Born in Orange, N.J. Medical degree: Jefferson Medical College, 1959. Specialty: Radiology.

ASHOK K. KACKER, M.D. Office: Freedmen's Hospital. Born in Kanpur, U. P., India. Medical degree: King George's Medical College, Lucknow, India, 1962. Specialty: Radiology.

LAWRENCE KLEIN, M.D. Office: 916 19th Street, N.W. Born in Washington, D.C. Medical degree: Northwestern University, 1963. Specialty: Internal Medicine.

WILLIAM P. TUNELL, M.D. Office: Children's Hospital. Born in Sioux Falls, S. D. Medical degree: Cornell University Medical College, 1959. Specialty: Pediatric Surgery.

Associate

J. THORNTON BOSWELL, M.D. Office: Suburban Hospital, Bethesda, Md. Born in Vinita, Okla. Medical degree: Ohio State University, 1949. Specialty: Pathology.

JOHN W. DOBBINS, M. D. Office: Walter Reed General Hospital. Born in Montgomery, Ala. Medical degree: University of Washington, 1968. Specialty: General Practice.

IBRAHIM M. KHATRI, M.D. Office: 6854 New Hampshire Avenue, Takoma Park, Md. Born in Bombay, India. Medical degree: Grant Medical College, Bombay, India, 1961. Specialty: Internal Medicine.

PASQUALE M. PALUMBO, M.D. Office: 3217 Columbia Avenue, Arlington, Va. Born in Newark, N.J. Medical degree: University of Bologna School of Medicine and Surgery, Bologna, Italy, 1957. Specialty: Orthopedic Surgery.

Ernest Williams, M.D. Office: 5208 Colorado Avenue, N.W. Born in Nevis, West Indies. Medical degree: Howard University, 1930. Specialty: Neurology-Psychiatry.

Resident-Intern

Charles J. Tegtmeyer, M.D. Office: George Washington University Hospital. Born in Utica, N.Y. Medical degree: George Washington University, 1965. Specialty: Radiology.

MEETINGS

The Department of Medicine of the U.S. Naval Hospital, Bethesda, Md. is conducting a short course in general interal medicine entitled **"Current Concepts in Medicine"** to be held on September 17 and 18, 1970. The course, similar to the one held last year, will be a series of short presentations and panel discussions on topics of current interest. Registration is free. The course is open to all interested military and civilian physicians.

GENERAL NEWS

Georgetown University Medical Center announces that its **Fifth Postgraduate Medical Seminar Cruise** will include visits to the Caribbean Islands. The *S.S. Europa* will leave New York on November 6 and will make 6 port calls, returning to New York on November 19.

Further information may be obtained from the official transportation agent for the Seminar Cruise, Allen Travel Service, 565 Fifth Avenue, New York, N.Y. 10017.

The American Medical Association announces that its Department of Postgraduate Program has been divided into the Department of Medical Instrumentation and the Department of Scientific Assembly. The former will be directed by Dr. Ralph E. DeForest and the latter by Mr. Ralph P. Creer.

The Board of Trustees also changed the name of the AMA Committee on Emergency and Disaster Medical Care to the Committee on Emergency Medical Services.

Research grants are being offered by the **National Society for the Prevention of Blindness** to promising investigators who have not received extensive financial support for research in the past and are not currently financed by other sources of research funds. Acceptable projects are those which may contribute to the basic understanding of eye function and disease, improvement of diagnosis and treatment, or prevention of eye disease.

Application forms and further information may be obtained by writing to the Committee on Basic and Clinical Research, National Society for the Prevention of Blindness, Inc., 79 Madison Ave., New York, N.Y. 10016.

DOCPAC BRIEFS

Is National Health Insurance on its Way? The idea of a National Health Insurance Plan has generated more interest this year than in some of the years past. Perhaps the death of Walter Reuther will make some difference as he was leading the fight for National Health Insurance.

The AMA has proposed Medicredit. This plan gives an income tax credit ranging from 10 to 100 per cent of the premium cost. Medicaid will be repealed and with these savings the net cost of Medicredit is estimated at 7.6 billion dollars.

Under Medicredit everyone would be protected except military personnel and the over—65 population who would continue to rely upon Medicare.

This seems like a plausible scheme and certainly much better than the national health insurance plans promoted by Walter Reuther's Committee of 100 and the other bills introduced by Senator Edward Kennedy of Massachusetts and Representative Martha W. Griffiths of Michigan.

Colleagues! It's up to you to help promote Medicredit. To do this we need dollars. Have you helped the free private practice of medicine continue? If you are truly interested in keeping medicine free of government control, then contribute and join DOCPAC, your District of Columbia Medical Society's Political Action Committee, a branch of the AMA's Political Action Committee.

Dues are $20 for the individual and $30 per family. Send your money now to:

William H. Cooper, M.D., *Chairman*
DOCPAC
825 New Hampshire Avenue, NW
Washington, D. C. 20037

Effects of New Drugs on Migraine: The coöperation of physicians is also requested in the referral of patients for studies of the effects of new drugs on migraine being conducted by the Experimental Therapeutics Branch of the National Heart Institute at the Clinical Center.

Preference will be given to patients who develop frequent, clinically typical episodes of migraine and who are able to undergo a period of in-hospital observation for 1 to 2 months. Patients will be evaluated initially in the Outpatient Department where they will be informed of the objectives and nature of the proposed therapy prior to admission.

Physicians who wish to have their patients considered for these studies may phone or write Dr. David Horwitz, Clinical Center, Room 7-N-262, National Institutes of Health, Bethesda, Md. 20014; telephone (301) 496-2452.

The Woman's Auxiliary to the Medical Society of the District of Columbia has elected the following officers for 1970–1971.

President-elect: Mrs. George W. Hyatt
First Vice President: Mrs. Frank S. Ashburn
Second Vice President: Mrs. Joseph Daly
Recording Secretary: Mrs. Harold T. Yates
Assistant Recording Secretary: Mrs. William H. Dickson
Corresponding Secretary: Mrs. Joseph R. Young
Assistant Corresponding Secretary: Mrs. Joseph P. Swift
Treasurer: Mrs. Robert B. Havell
Assistant Treasurer: Mrs. George A. Boinis

Mrs. Charles V. Pate, President-elect during the past year, is the new President of the Auxiliary.

The Rheumatism Society of the District of Columbia elected the following officers, June 10:

Dr. Ronald W. Lamont-Havers, *President*; Dr. F Paul Alepa, *Vice President*; and Dr. Henry Roth, *Secretary-Treasurer*.

Mr. Raymond ("Ray") H. Everett, prominent in the field of social hygiene for many years, died, June 14, 1970.

Mr. Everett was Executive Secretary of the Social Hygiene Society of Washington and Editor of its *Journals of Social Hygiene* for 35 years. He retired in 1954.

A graduate of Yale University, he also attended Yale Law School. In addition to his work at the Social Hygiene Society he was a marriage counselor and lecturer at George Washington University.

Dr. Mansour F. Armaly has been named **to head the George Washington University Department of Ophthalmology.** Formerly Professor of Ophthalmology at the University of Iowa, he will direct the clinical treatment, research and educational activities of the GW department. He has served on various review boards as a consultant for Federally-supported research and as a member and Chairman of the Visual Sciences Study Section of the National Institutes of Neurology and Blindness.

Dr. Armaly is the author of 75 published papers in the field of retinal and optic nerve physiology and diseases, glaucoma research, ocular hypertension, and visual function. His major contribution has been in the detection of early stages of glaucoma to render it amenable to early treatment and in identifying its genetic nature.

A native of Palestine, Dr. Armaly graduated with distinction from the American University in Beirut, Lebanon, and from its American College of Medicine. He also holds an M.S. degree in ophthalmology from the University of Iowa.

PERSONALS

Dr. Margaret W. Bridwell, obstetrician and gynecologist, has become the first gynecologist to serve full-time with the University of Maryland Health Service and the second woman on the medical staff.

A graduate of Tulane University and the Louisiana State Medical Center, Dr. Bridwell served on the staff of White Cross Hospital in Columbus, Ohio, from 1955 to 1958, and since that time she has been a medical officer in her specialty with the D.C. Health Department. She assumed her new duties, July 1.

Dr. W. Palmer Dearing will retire as Executive Director of Group Health Association of America, September 1, and will serve thereafter as a consultant. He was presented its Distinguished Service Award during the Group Health Institute held recently in Hawaii.

Dr. Dearing, a graduate of Harvard Medical School, was commissioned in the U.S. Public Health Service in 1934. He joined GHAA in 1961 after a distinguished public health career of 27 years, including service as Deputy Surgeon General of PHS between 1948 and 1957.

Dr. Anthony S. Garofano has been named Chairman of the new Psychiatric Service at Providence Hospital. The 20-bed unit has been designed to provide inpatient care for the short-term treatment of patients. A graduate of the Georgetown University School of Medicine, Dr. Garofano has served as Director of the Mental Health Clinic in the Outpatient Department at Providence for the past several years.

Prosthetic Materials in Tendon Surgery—Rogers

(*Continued frow page 416*)

McKee, G. K.: Metal anastomoses tubes in tendon suture. Lancet, 1945, **1**, 659.

Neuman, Z., Ben-Hur, N., and Tritsch, I. E.: Induction of tendon sheath formation by the implantation of silicone tubes in rabbits. Brit. J. Plast. Surg., 1966, **19**, 313.

Pate, J. W., and Sawyer, P. N.: Freeze-dried aortic crafts. A preliminary report of experimental evaluation. Amer. J. Surg., 1953, **86**, 3.

Weckesser, E. C., Shaw, B. W., Spears, G. N., and Shea, P. C., Jr.: Comparative study of various substances for the prevention of adhesions about tendons. Surgery, 1949, **25**, 361.

Wheeldon, T.: Use of cellophane as a permanent tendon sheath. J. Bone Joint Surg., 1939, **21**, 393.

Williams, R. D., and August, S. F.: Experimental evaluation of a Teflon tendon prosthesis. Amer. J. Surg., 1964, **107**, 913.

"Silent" Atresia of Cervis—Gerber, Bepko and Gerber

(*Continued from page 419*)

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8. Emge, L. A.; edited by Davis, C. H., and Carter, B.: Gynecology and Obstetrics, Chap. II, p. 41. Hagerstown, Md.: Prior, 1963.
9. Howkins, J., editor: Shaw's Textbook of Operative Gynecology, 3rd ed. London: Livingstone, 1968, p. 124.
10. Jeffcoate, T. N. A.: Principles of Gynecology, 3rd ed. London: Butterworth, 1967, p. 320.

Menetrier's Disease—Mahmood, Ali and Nash

(*Continued from page 436*)

14. Gordon, R. S.: Lancet, 1959, **1**, 325.
15. Schwartz, M., and Jarnum, S.: Ibid., 1959, **1**, 327.
16. Glass, G. B., and Ishimori, A.: Amer. J. Dig. Dis., 1961, **6**, 101.
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20. Berger, J. S., Butz, W. C., and Graham, J. E.: Amer. J. Surg., 1954, **88**, 967.
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Don't buy your office narcotic needs on an Rx blank. The law requires that you use an official order form.

Don't resent a pharmacist's call for verification of an Rx. He is held responsible if forgeries are filled.

Don't hesitate to call an agent of the Federal Bureau of Narcotics (at your nearest Federal Building) or the Narcotics Division of the D. C. Department of Police if the patient is suspect. Your information will be held in strict confidence.

Do not phone in a Class A Narcotic Rx except in true emergencies; even then the pharmacist must have a written prescription in his or his agent's hand before he can make delivery to your patient. The pharmacist or his agent may pick up the Rx at your office or at the home before making delivery.

Violations of this section of the narcotic law may entail 2 to 10 years' imprisonment and up to a $20,000 fine for the first offense; second and third violations are more severe.

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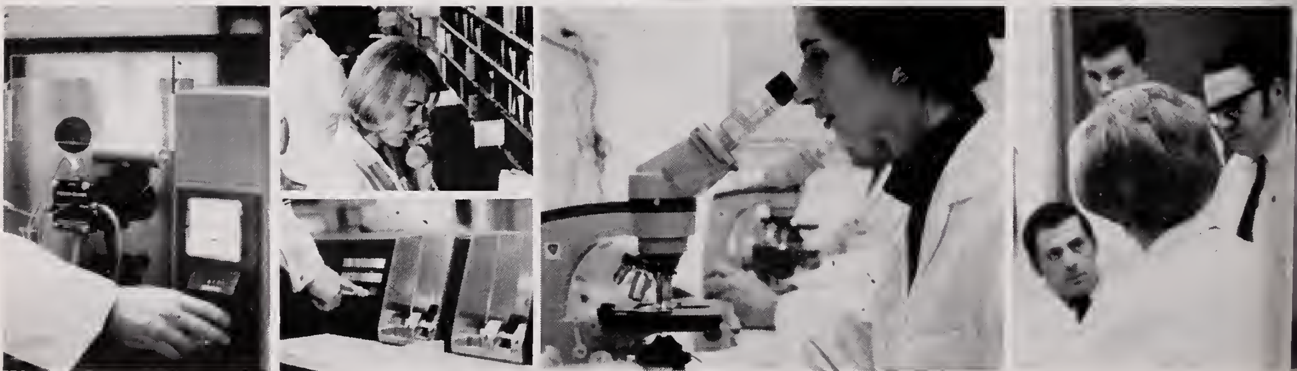

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OBITUARIES

Leland S. Madden, M.D.

(1885–1970)

Dr. LeLand S. Madden, a Life member of the Medical Society of the District of Columbia, died February 15, 1970. He lived at 6 Shore Road, Linwood, New Jersey.

Dr. Madden was born, January 1, 1885 in Absecon, New Jersey. He attended the Peddie Institute of Hightstown, N.J. After receiving his medical degree from the Medico-Chirurgical College of Philadelphia (now the University of Pennsylvania School of Medicine) in 1906, he interned at the St. Francis Hospital in Trenton and the Samaritan Hospital in Portland, Oregon. He took postgraduate training in obstetrics and urology at several hospitals in New York City.

Dr. Madden practiced general medicine in Weston, Oregon from 1909 to 1913; in Pleasantville, N.J. 1915 to 1942; and in the District of Columbia from 1942 until he moved to New Jersey in 1963. In Washington his offices were last located in his home at 1831 Varnum Street, N.E.

Dr. Madden was a member of the American Medical Association and the Southern Medical Association. He was elected an Active member of the D. C. Medical Society in 1943 and became a Life member in 1965.

His wife, Mrs. Josephine Stokes Madden, preceded him in death.

Virginia Patterson Beelar, M.D.

(1912–1970)

Dr. Virginia P. Beelar, who had practiced medicine in the Washington area for over 32 years, died, June 7, 1970, at her home, 866 Canal Drive, McLean, Va.

Dr. Beelar was born in New Pine Creek, California, on September 27, 1912. She received her Bachelor of Arts degree in 1933 and her medical degree in 1936, both from the University of Oregon. She interned at the New England Hospital in Boston from 1936 to 1937 and served as resident physician at St. Elizabeths Hospital in Washington, D. C., from 1937 to 1939.

Dr. Beelar, who specialized in internal medicine, taught at George Washington University from 1949 to 1968. She was an attending physician at at D. C. General Hospital and the Washington Medical Center. At the latter she was Chief of the Arthritis Clinic from 1957 to 1962. She retired from private practice in 1962.

Dr. Beelar served on the Board of Directors of the Arthritis and Rheumatism Association of Metropolitan Washington for 2 terms and was named an Honorary Director in 1963.

She was a Fellow of the American College of Physicians and a member of the American Medical Association, the American Rheumatism Association, the American Heart Association, the American Society of Internal Medicine, and the American Medical Women's Association. She was elected to Associate membership in the Medical Society of the District of Columbia in 1940 and transferred to Active membership in 1950.

She leaves her husband, Donald C. Beelar, and a daughter, Barbara Ann, both of the home address, and a brother, Byron Patterson, of San Francisco.

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George Richard Huffman, M.D.
(1896–1970)

Dr. George R. Huffman, who had practiced internal medicine in Washington for 42 years, died, June 10, 1970, at his home, 6400 Shadow Road, Kenwood, Md. He retired from practice in 1968.

Born in Millersburg, Ky., March 24, 1896, Dr. Huffman received his A.B. degree from Transylvania University, Lexington, Ky., and his medical degree from the University of Cincinnati School of Medicine in 1923. He interned at Cincinnati General Hospital from 1923 to 1924 and trained in internal medicine at Johns Hopkins University Hospital from 1924 to 1926. He was on the attending staff of several hospitals in the Washington area.

Elected to Active membership in the Medical Society of the District of Columbia in 1927, Dr. Huffman became a Life member in 1967. He was a member of the American Medical Association, the American Society of Internal Medicine, the Hippocrates-Galen Society, the Washington Heart Association, and the Clinical Club of Washington.

He is survived by his wife, Mrs. Helen Huffman, of the home address; a daughter, Mrs. Ethel H. Smythe, of Alexandria, Va.; and a son, Dr. Richard M. Huffman, of Garrett Park, Md.

Angus M. Griffin, Ph.D.
(1910–1970)

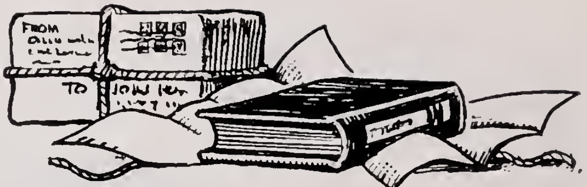
Dr. Angus M. Griffin, Associate Dean of the George Washington University Medical Center, died, June 24, 1970. He lived at 2916 Cleave Drive, Falls Church, Va.

Born in Franklin, New Hampshire, in 1910, he held 3 degrees from Brown University: Ph.B., M.A., and Ph.D. (1938) in bacteriology.

Dr. Griffin joined the George Washington University faculty in 1940 as Assistant Professor of Bacteriology and rose through the academic ranks to full professor before becoming Assistant Dean in 1955. In 1957 he became Associate Dean, and his last appointment was Associate Dean for Administration and Planning.

The author of approximately 40 publications and reports in professional journals in the fields of microbiology, parasitology and immunology, Dr. Griffin is listed in "Who's Who" and "American Men of Science." He was a member of the Amerisan Society for Microbiology, the Association of American Colleges, and the Cosmos Club.

He is survived by his wife, Mrs. Ruth Clark Griffin, of the home address.



Books Received

Homeostatic Regulators. A Ciba Foundation Symposium held jointly with the Wellcome Trust. Edited by G. E. W. Wolstenholme and Julie Knight Price, $13.75. Pp. 327, with 84 illustrations. London: Churchill, 1969.

Foetal Autonomy. A Ciba Foundation Symposium. Edited by G. E. W. Wolstenholme and Maeve O'Connor. Price, $13.00. Pp. 326, with 73 illustrations. London: Churchill, 1969.

Mutation as Cellular Process. A Ciba Foundation Symposium. Edited by G. E. W. Wolstenholme and Maeve O'Conner. Price, $11.50. Pp. 244, with 48 illustrations. London: Churchill, 1969.

Spectroscopic Approaches to Biomolecular Conformation. D. W. Urry, Editor. Price, $15.00. Pp. 314. Chicago: American Medical Association, 1970.

The Law and Clinical Medicine. Elliot L. Sagall, M.D., and Barry C. Reed, LL.B. Price, $10.00. Pp. 224. Philadelphia: Lippincott, 1970.

Adler's Physiology of the Eye: Clinical Application, 5th ed. Edited by Robert A. Moses, M.D., with 6 contributors. Price, $22.50. Pp. 713, with 656 illustrations. St. Louis: Mosby, 1970.

Gas Chromatography in Biology and Medicine. A Ciba Foundation Symposium. Ruth Porter, Editor. Price, $11.50. Pp. 213, with 67 illustrations. London: Chruchill, 1969.

The Adolescent Patient. William A. Daniel, Jr., M.D. Price, $20.50. Pp. 444, with 76 illustrations St. Louis: Mosby, 1970.

Current Procedural Terminology, 2nd ed. Edited by Burgess L. Gordon, M.D., William R. Barclay, M.D., and Charlotte Fanta. Price (paper), $2.00. Pp. 368. Chicago: American Medical Association, 1970.

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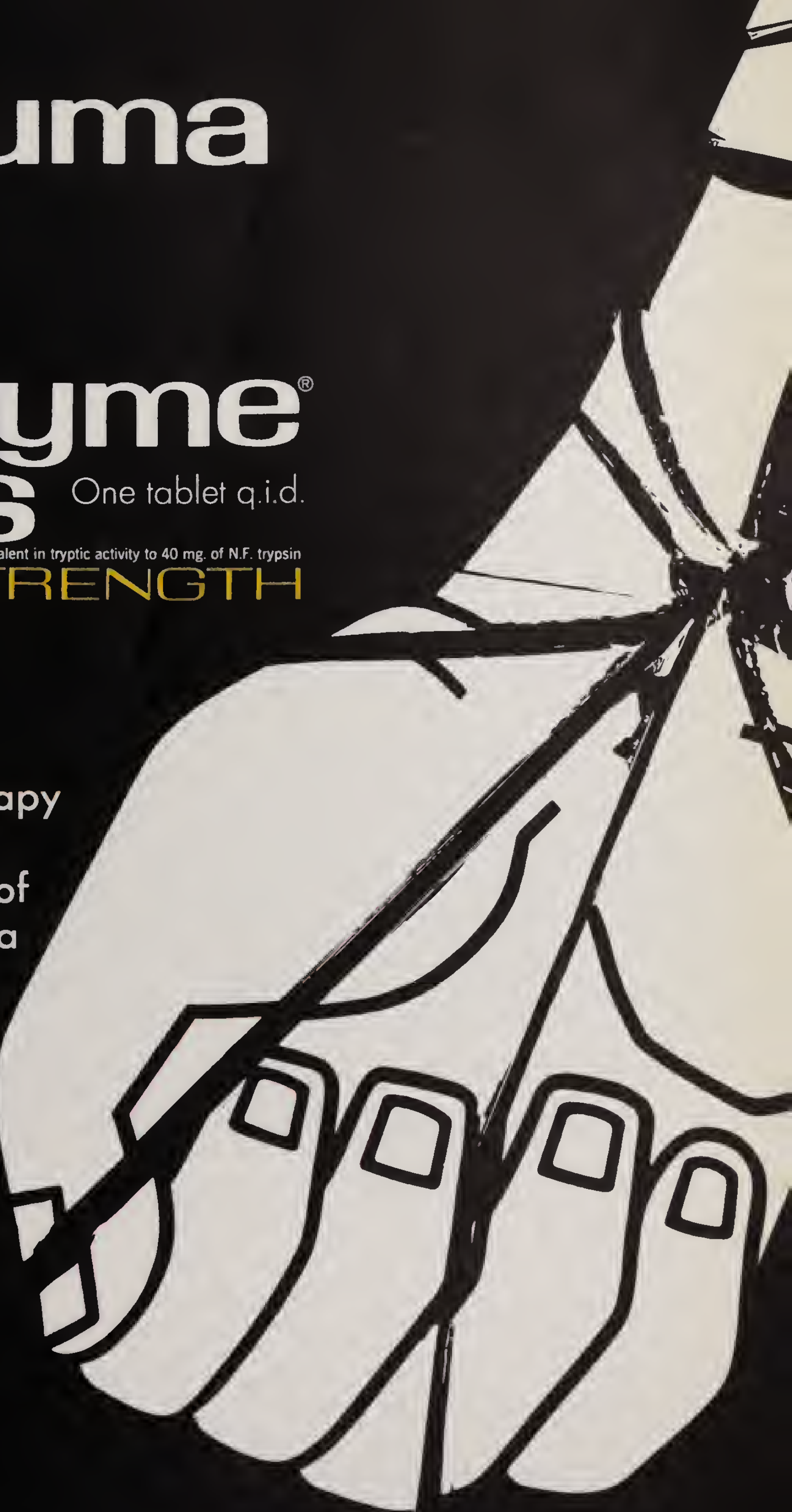

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References: 1. Gardner, H. L.: J. Miss. M.A. 8:529, 967. 2. Porter, P. S., and Lyle, J. S.: Arch. Dermat. 93:402, 1966. 3. Walsh, H.; Hildebrandt, E. J., and Prystowsky, H.: Am. J. Obst. & Gynec. 93:904, 1965. 4. Vaginitis and the Pill: J.A.M.A. 196:731, 1966. 5. Guerriero, W. F.: South. M.J. 56:390, 1963. 6. Seelig, M. S.: Am. J. Med. 40:887, 1966. 7. To-day's Drugs, New York, Grune & Stratton, Inc., 1965, p. 316. 8. Gray, L. A., and Barnes, M. L.: Am. J. Obst. & Gynec. 92:125, 1965. 9. Salerno, L. J.; Ortiz, G., and Turkel, V.: Vaginitis: A Diagnostic and Therapeutic Approach, Scientific Exhibit, presented at the 115th Annual A.M.A. Convention, Chicago, Illinois, June 1966. 10. Walsh, J. C.; Sheffery, J. B., and Wilson, T. A.: Med. Ann. D.C. 37:358, 1968. 11. Nugent, F. B., and Myers, J. E.: Pennsylvania Med. 69:44, 1966.

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Book Reviews

Manic Depressive Illness. George Winokur, M.D., Paula J. Clayton, M.D., and Theodore Reich, M.D., C.M. Price (paper), $6.50. Pp. 186. St. Louis: Mosby, 1969.

Despite a bright soft cover this is not a quickly read pocket book. It is a detailed review along with original work. If one labors through the various charts, figures and tiny print, it is worth it. There is good evidence that recurrent depressions are quite distinct clinically and genetically from a true manic-depressive psychosis. Mania is much less common than depression; its onset is often in the teens. The earlier the onset the more likely the relapse and in the same direction as the original episode. Some somber facts emerge: Only a minority of manic patients have complete and lasting remissions; depression rather than recurrence of mania is the major problem in follow-up. With the passage of time the illness does not change its clinical characteristics. Other correlations include: In contrast to depressives, manics are less neurotic and not obsessional; suicide behavior is more common in women; and relatives are more likely to be compulsive gamblers. Childbirth can precipitate a manic relapse. We are reminded that manic behavior may occur in lues, tumors, fevers, and with steroids.

Through the use of family studies the authors present strong evidence for a genetic mode of transmission postulating that the manic-depressive dominant gene is located on the short arm of the X chromosome. The meager evidence for a psychological etiology in the disorder is reviewed along with biochemical theories. For the clinician the treatment section is the most useful. In addition to a review of usual treatments the authors remind us that electroconvulsive therapy may be very helpful in acute mania, that small doses of reserpine added to imipramine (Tofranil®) may improve depression, and that methysergide (Sansert®) has been very helpful in mania.

The book is suitable for the general psychiatrist and should be available in libraries for psychiatric residents.

John G. Lofft, M.D.

Drugs of Choice 1970-1971. Walter Modell, M.D., Editor. Price, $20.50. Pp. 924. St. Louis: Mosby, 1970.

"The Drugs of Choice for 1970-71" is a good reference for the practicing physician. Drug therapy is now in an era which is exciting and increasingly useful but one in which much conflict can result. This is partially due to the increased problem of drug abuse and the various social and economic forces which are bringing considerable attention to the process of drug prescribing and the distribution of drug information for the physician and patient. It is important for the physician to be exposed to a broad base of information relating to the therapeutic agents he employs, and the reference material must be readily available in a form which is convenient.

This book is well indexed in regard to specific pharmacological activity and clinical uses. Tables are presented for common types of drug reactions and for selecting alternate medication. General drug information in the early part of the book concerns legal considerations in the prescribing of therapeutic agents, principles involved in the choice of drugs, adverse reactions, calculation of dosage, and physical and chemical consideration of drug products.

There are many textbooks available to the physician which approach drug therapy while describing the disease in which the drug is commonly used. These texts are of necessity quite large and their strength lies in the pharmacology they present. Other texts are oriented more toward the medication and describe the therapeutic agent in regard to its physical chemistry and usual application. "Drugs of Choice" succinctly characterizes therapeutic agents that are presently in use. This is a challenging undertaking because of the potentially useful information which is rapidly accumulating. This information must be evaluated and subsequently presented for the practicing physician in a way which is understandable and clinically useful. This book will help.

James R. Snyder, M.D.

Diseases of Bone and Joints. Louis Lichtenstein, M.D. Price, $17.50. Pp. 228, with 287 illustrations. St. Louis: Mosby, 1970.

Basic biological knowledge of physiology, genetics, immunology, biochemistry and pathology of the skeletal system is needed to understand the dynamics of disease processes and the treatment of diseases of the bone and joints. There are relatively few books dealing with subjects such as "Diseases of Bone and Joints."

Fifteen chapters and 211 pages are hardly enough to cover all the subjects of orthopedic interest, but the discussions of those selected for the book are brief, comprehensive, and informative.

Dr. Louis Lichenstein is one of the leading bone pathologists in the United States. He has published an excellent book entitled "Bone Tumor" which is familiar to orthopedists and pathologists.

This book deals principally with clinical pathology of the diseases of bone and joints. Students, not necessarily orthopedists, who are interested in diseases of bone and joints will find it useful. Physicians who already have his volume, "Bone Tumor," might be interested in having this book as a companion volume.

C. C. LIU, M.D.

Synopsis of Obstetrics, 8th ed. CHARLES E. McLENNAN, M.D., with the collaboration of EUGENE C. SANDBERG, M.D. Price $9.50, Pp. 496, with 212 illustrations. St. Louis: Mosby, 1970.

The text is written principally for the medical student who wishes to survey a reduced amount of material included in the standard textbooks of obstetrics. There are 33 chapters which cover the topics of neonatal physiology and endocrinology, the clinical management of the pregnant woman, the disorders of preganancy, dystocia, injuries and infections of mother and child, obstetric surgery, and contraceptive methods. Each chapter presents concisely the basic principles of the topic with the exclusion of references to current literature.

The book is well written, indexed thoroughly, and can serve well the physician in training and the practicing physician, providing the Synopsis is used as the authors intended, for an initial view of the subject or as a preconference refresher.

LARRY McGOWAN, M.D.

Synopsis of Ear, Nose, and Throat Diseases, 3rd ed. ROBERT E. RYAN, M.D., M.S., F.A.C.S., JOSEPH H. OGURA, M.D., F.A.C.S., HUGH F. BILLER, M.D., AND LINDSAY L. PRATT, M.D. Price, $10.75. Pp. 379, with 95 illustrations. St. Louis: Mosby, 1970.

This excellent book appears to fulfill the aim of its authors to provide a concise, up-to-date synopsis of ear, nose, and throat diseases for the undergraduate medical student, intern, resident, and practicing physician. While this book is not intended primarily for use by the specialist in otolaryngology, the orderly and systematic presentation of material makes it a valuable, quick reference for the otolaryngolist.

The contents are divided into 4 parts: the ear, the nose and paranasal sinuses, the pharynx, and the larynx, each part beginning with a brief, well-illustrated description of its anatomy and physiology. There follows a discussion of the specific diseases affecting those areas, including their etiology, symptoms, and treatment. The last is particularly helpful and quite up-to-date.

I could find no significant deficiencies in the book and expect that it will be used extensively.

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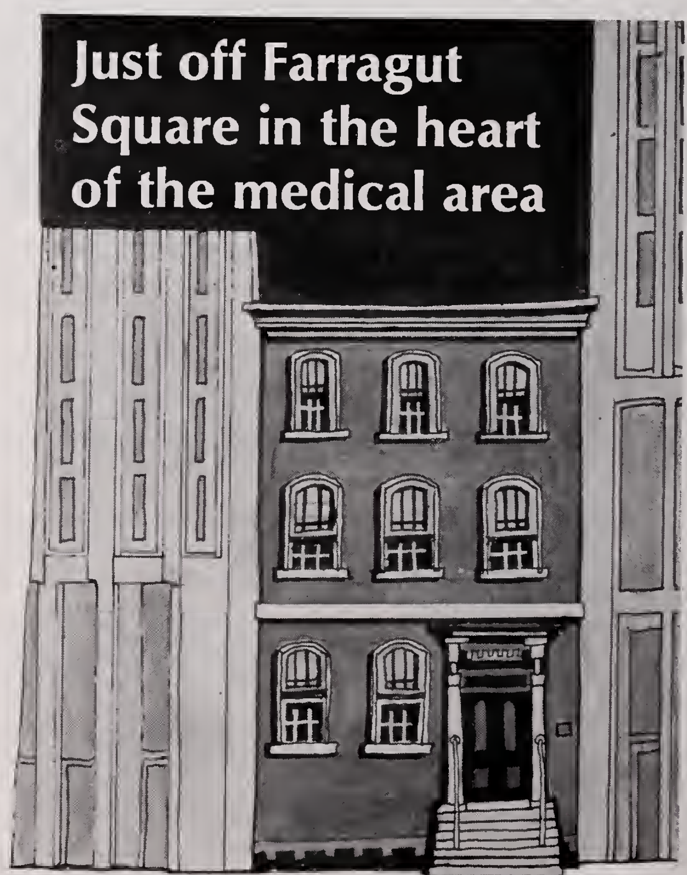

NATIONAL & REGIONAL MEETINGS

September 6–12: Second International Congress of Parasitologists. Mayflower Hotel, Washington. Address: Dr. Aurel O. Foster, Director, Beltsville Parasitological Laboratory, U.S. Department of Agriculture, Beltsville, Md. 20705.

September 9–11: 1970 Scientific Assembly of the Medical Society of the District of Columbia. Washington Hilton Hotel, Washington. Address: Mr. Thomas Sadler, Executive Director, 2007 Eye Street, N.W., Washington, D.C. 20006.

September 10–12: American Association of Obstetricians and Gynecologists. The Homestead, Hot Springs, Va. Address: Dr. Charles A. Hunter, Jr., Secretary, Indiana University Medical Center, 1100 West Michigan Street, Indianapolis, Ind. 46202.

September 11–19: College of American Pathologists. Marriott Motor Hotel, Atlanta, Ga. Address: Mr. Oliver J. Neibel, Jr., Executive Director, 230 North Michigan Ave., Chicago, Ill. 60601.

September 14–20: American Electroencephalographic Society. Shoreham Hotel, Washington. Address: Dr. Philip T. White, Secretary, Department of Neurology, Marquette University School of Medicine, Milwaukee, Wisc. 53226.

September 19–20: National Congress on Medical Ethics. Ambassador West Hotel, Chicago. Address: Medical Ethics Department, American Medical Association, 535 North Dearborn Street, Chicago, Ill. 60610.

September 25–October 1: American Academy of General Practice. San Francisco, Address: Mr. Mac F. Cahal, Executive Director, Vokler Blvd. at Brookside, Kansas City, Mo. 64112.

October 3–4: American Association of Ophthalmology. Las Vegas, Nev. Address: Mr. Lawrence A. Zupan, Executive Secretary, 1100 17th Street, N.W., Washington, D.C. 20036.

October 12–16: American College of Surgeons. Conrad Hilton Hotel, Chicago. Address: Dr. C. Rollins Hanlon, Director, 55 East Erie Street, Chicago, Ill. 60611.

October 17–22: American Academy of Pediatrics. San Francisco Hilton, San Francisco. Address: Dr. Robert G. Frazier, Executive Director, 1801 Hinman Avenue, Evanston, Ill. 60204.

October 25–31: American College of Gastroenterology. Statler Hotel, New York. Address: Mr. Daniel Weiss, Executive Director, 299 Broadway, New York, N.Y. 10007.

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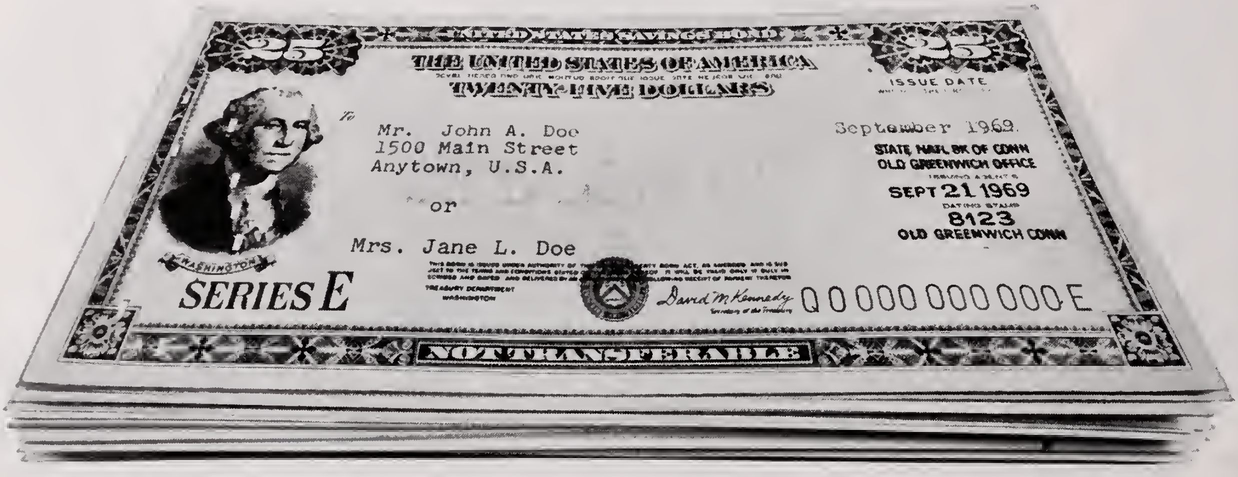

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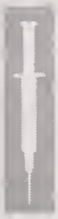

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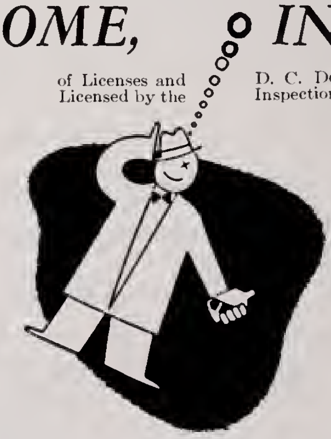

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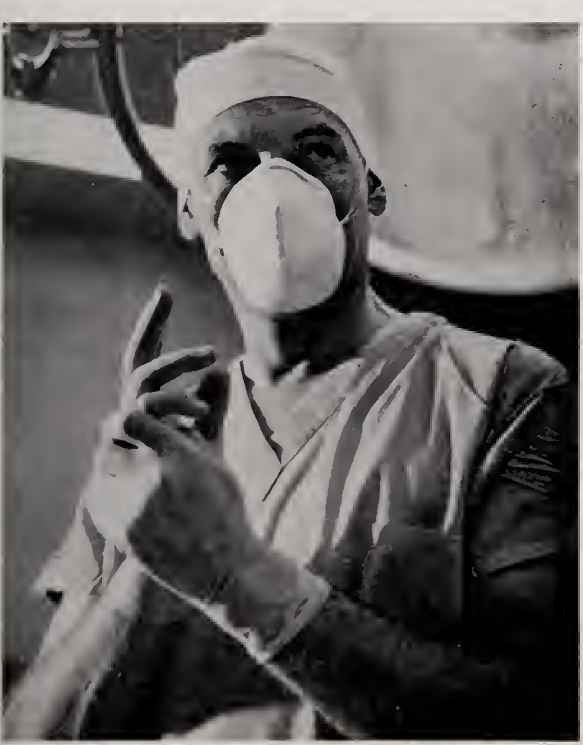

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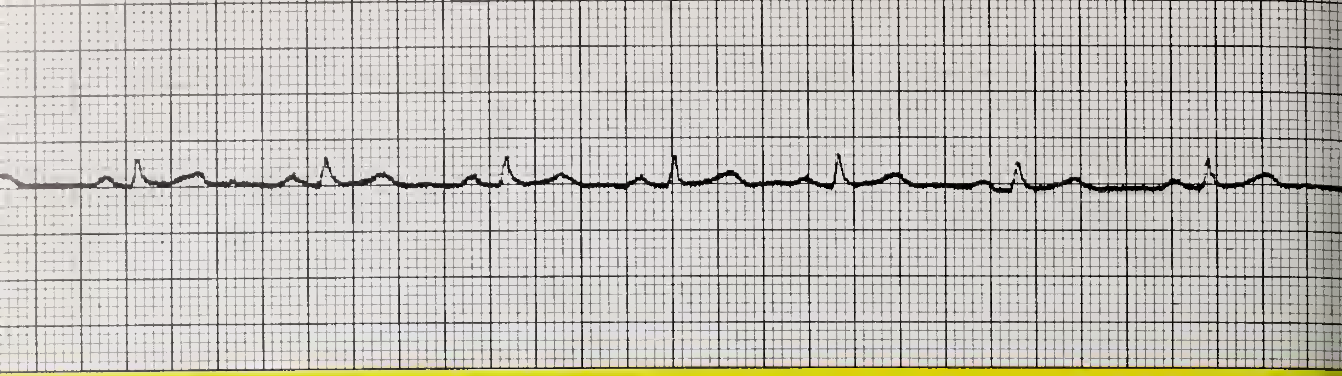

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Precautions: If combined with other psychotropics or anticonvulsants, consider carefully pharmacology of agents employed. Usual precautions indicated in patients severely depressed, or with latent depression, or with suicidal tendencies. Observe usual precautions in impaired renal or hepatic function. Limit dosage to smallest effective amount in elderly and debilitated to preclude ataxia or oversedation.

Side Effects: Drowsiness, confusion, diplopia, hypotension, changes in libido, nausea, fatigue, depression, dysarthria, jaundice, skin rash, ataxia, constipation, headache, incontinence, changes in salivation, slurred speech, tremor, vertigo, urinary retention, blurred vision. Paradoxical reactions such as acute hyperexcited states, anxiety, hallucinations, increased muscle spasticity, insomnia, rage, sleep disturbances, stimulation, have been reported; should these occur, discontinue drug. Isolated reports of neutropenia, jaundice; periodic blood counts and liver function tests advisable during long-term therapy.

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THE MEDICAL SOCIETY of the DISTRICT OF COLUMBIA

CHILDREN'S HOSPITAL CENTENNIAL NUMBER

Pediatric Intensive Care Unit
CHESTON M. BERLIN, M.D.

Juvenile Diabetes
W. HUNG, M.D., M. LEE, M.D., AND
G. P. AUGUST, M.D.

Surgery for Cardiac Defects
J. E. McCLENATHAN, M.D., L. P. SCOTT, M.D., AND
L. W. PERRY, M.D.

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LUCAS L. KULCZYCKI, M.D.

Acquired Hemiplegia
GLORIA D. ENG, M.D.

Solid Tumors at Children's Hospital
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Atypical Mycobacterium
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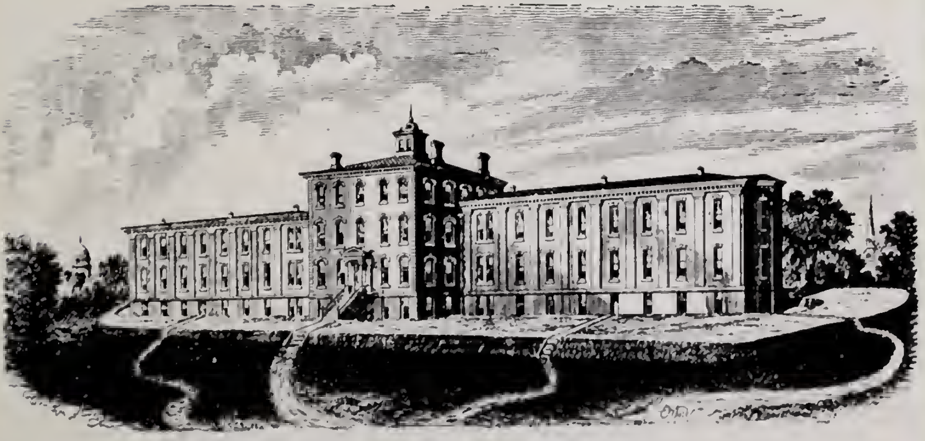

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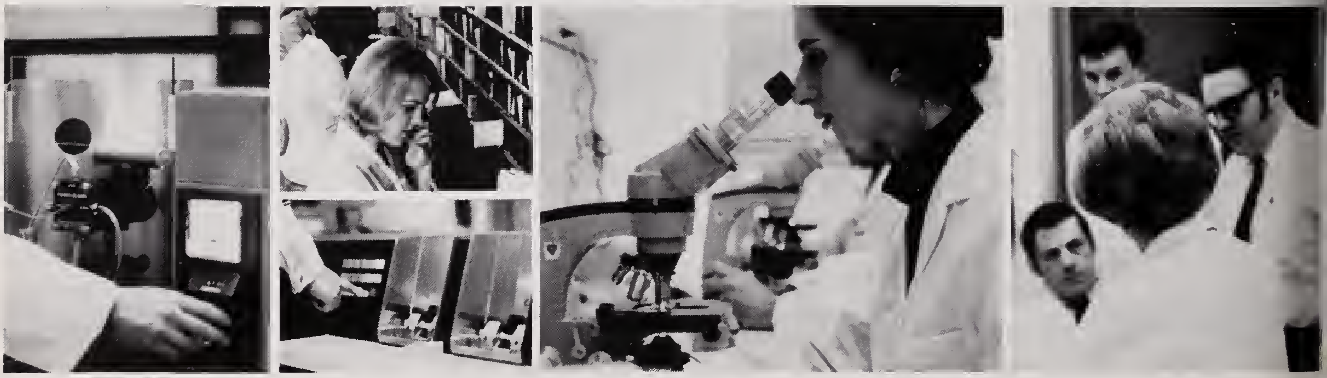

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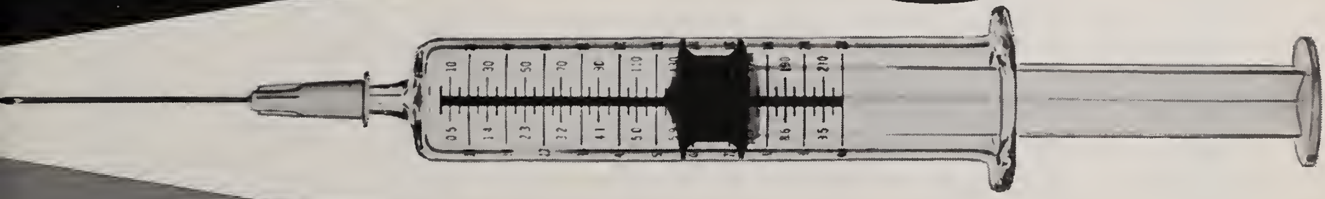

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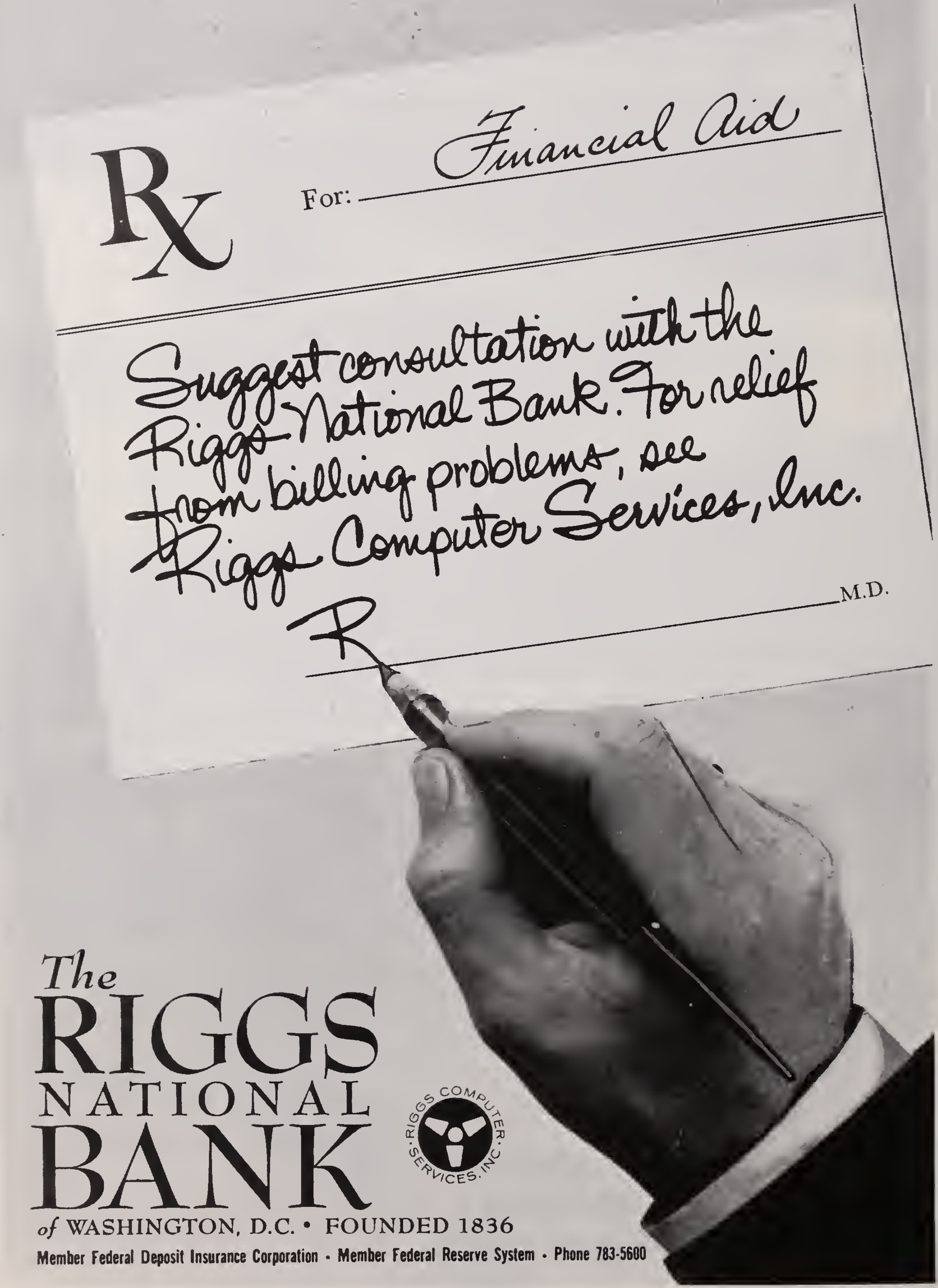

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Yearly Subscription, $8.00
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Second-class postage paid at Baltimore, Md.
Published monthly at
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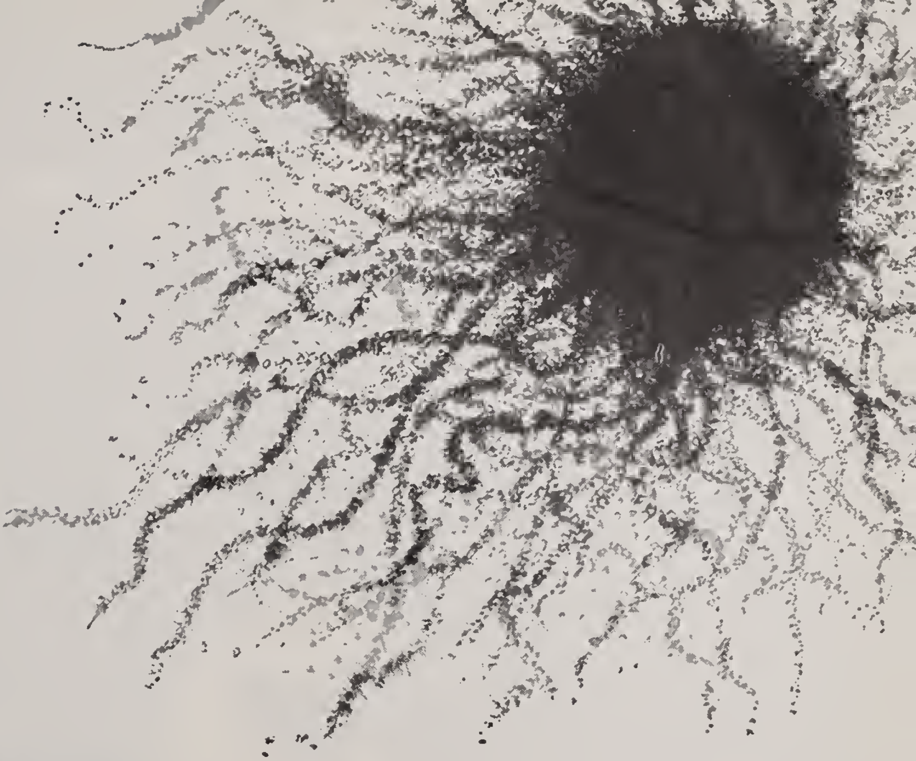

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Side Effects: Gastrointestinal system—anorexia, nausea, vomiting, diarrhea, stomatitis, glossitis, enterocolitis, pruritus ani. Skin—maculopapular and erythematous rashes; a rare case of exfoliative dermatitis has been reported. Photosensitivity, onycholysis and discoloration of the nails (rare). Kidney—rise in BUN, apparently dose-related. Transient, reversible, nephrogenic diabetes insipidus with excessive thirst and polyuria (rare). Hypersensitivity reactions—urticaria, angioneurotic edema, anaphylaxis. Teeth—dental staining (yellow-brown) in children of mothers given this drug during the latter half of pregnancy, and in children given the drug during the neonatal period, infancy and early childhood. Enamel hypoplasia has been seen in a few children. If adverse reaction or idiosyncrasy occurs, discontinue medication and institute appropriate therapy. Demethylchlortetracycline may form a stable calcium complex in any bone-forming tissue with no serious harmful effects reported thus far in humans.

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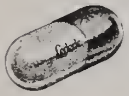

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Average Adult Daily Dosage: One Gm. per day, in 4 divided doses of 250 mg. each. Should be given 1 hour before or 2 hours after meals, since absorption is impaired by the concomitant administration of high calcium content drugs, foods and some dairy products. Treatment of streptococcal infections should continue for 10 days, even though symptoms have subsided.

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See Clinical Considerations section on last page...

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Other Infections including bacteremia, infected surgical wounds, severe soft tissue infections, and respiratory tract infections (due to susceptible strains of gram-negative bacteria)	3 mg./kg. for 7-10 days		

†Alkalinization of the urine may be a useful therapeutic adjunct.

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BACTERIA	No. of Strains Tested	No. of Strains (%) Inhibited by: 4 mcg./cc. or less		8 mcg./cc. or less*		No. of *In Vitro* Studies
Staphylococcus aureus	1,210	1,200	(99%)	1,206	(99%)	11
Pseudomonas aeruginosa	885	771	(87%)	828	(93%)	16
Escherichia coli	836	736	(88%)	779	(93%)	11
Indole-positive and indole-negative *Proteus* species	477	210	(44%)	358	(75%)	12
Klebsiella-Aerobacter species	292	205	(70%)	231	(79%)	10

*Number of strains (%) of gram-negative bacteria inhibited by 10 mcg./cc. or less are as follows: *Pseudomonas aeruginosa,* 828 (93%); *Escherichia coli,* 792 (95%); *Proteus* species, 393 (82%); *Klebsiella-Aerobacter* species, 284 (97%). From same studies as above.
Source: Package Insert

This drug should be limited to the treatment of serious infections caused by gram-negative bacteria, particularly *Pseudomonas aeruginosa, Proteus* and other susceptible organisms, with due regard for relative antibiotic toxicity. Therefore, the drug should be considered for use against gram-negative: 1. Bacteremia; 2. Infected surgical wounds; 3. Severe soft tissue infections, including burns complicated by sepsis; 4. Respiratory tract infections; and 5. Selected cases of urinary tract infection.

Contraindications: Garamycin Injectable is contraindicated in individuals with a history of hypersensitivity or toxic reactions to gentamicin.

Warnings: Patients receiving treatment with GARAMYCIN should be under close clinical observation because of the toxicity associated with the use of this drug. Ototoxicity, vestibular and auditory, can occur in patients, primarily those with preexisting renal damage, treated with GARAMYCIN Injectable, usually for longer periods or with higher doses than recommended.

GARAMYCIN Injectable is potentially nephrotoxic, and this should be kept in mind when it is used in patients with preexisting renal impairment. Kidney function diminished by infection of the upper urinary tract may, however, improve during effective treatment with GARAMYCIN Injectable.

Concurrent administration of potentially ototoxic drugs such as streptomycin and kanamycin or of potentially nephrotoxic drugs such as polymyxin, colistin, and kanamycin with gentamicin sulfate has not been shown to afford any clinical advantages and, moreover may result in additive toxicity. Monitoring of vestibular, cochlear, and renal function will provide guidance for therapy in such cases.

Precautions: In patients with impaired renal function in whom serious infection develops, serum concentrations of the drug may rise, with consequently increased risk of ototoxicity. In these patients or in those in whom recommended dosage or duration of therapy must be exceeded as a life-saving measure, routine studies of kidney function should be performed when possible. These may be supplemented by evaluation of the vestibular and auditory function and measurement of serum concentration of the drug when feasible. Serum concentrations of gentamicin should be maintained below the range of 10-12 mcg./ml. to reduce risk of ototoxicity.

Ordinarily, treatment should not be given for more than 7 to 10 days or be repeated unless required for serious infection not responsive to other agents.

As with other antibiotics, treatment with Garamycin Injectable may occasionally result in overgrowth of nonsensitive organisms. If superinfection occurs, appropriate therapy is indicated.

Safety for use in pregnancy or the potential for fetal ototoxicity or nephrotoxicity have not been established. Studies in pregnant animals have not revealed teratogenic or ototoxic effects in the fetus. Garamycin Injectable should not be used in pregnant patients or in women of childbearing age unless its use is deemed advisable by the physician.

Adverse Reactions: The overall incidence of ototoxicity considered related to treatment with Garamycin Injectable was 2.8 per cent (16 of 565 patients). Contributory factors (two or more factors were relevant to most patients) were as follows: 10 had azotemia, 10 received a total of 1 gram or more of the drug, 7 had recently received other potentially ototoxic antibiotics (streptomycin or kanamycin), and 5 were over 60 years of age. Six also had decreased high-tone hearing acuity, which returned to or toward normal in the 4 patients retested.

Analysis of BUN data indicated that 4 (2%) of 172 patients showed increases in BUN that were probably related to treatment with Garamycin Injectable. Of 20 increases probably or possibly related to treatment, 7 were reversible, 9 occurred in terminal patients, and 4 had no follow-up.

Other adverse reactions associated with treatment were one instance each of urticaria, decreased hematocrit, and reversible depression of granulocytes with normal bone marrow. Other rarely reported and possibly treatment-related adverse reactions were anemia, increased reticulocyte count, rash, purpura, drug fever, hypotension, convulsions, twitching, salivation, nausea, vomiting, increased transaminase activity (SGOT or SGPT), increased serum bilirubin, decreased serum calcium, and joint pain.

Packaging: Garamycin Injectable, 40 mg./cc., 2-cc. multiple-dose vials, for intramuscular administration.

For more complete prescribing details, consult package insert or Physicians' Desk Reference. Schering literature is also available from your Schering Representative or Medical Services Department, Schering Corporation, Union, New Jersey 07083.

AHFS CATEGORY 8:12.28 S-029

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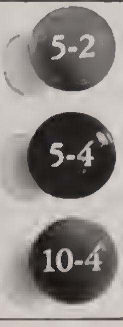

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VOLUME XXXIX • NUMBER 9

Children's Hospital Centennial Number

THIS IS THE SEVENTH of a sixth series of special numbers of the MEDICAL ANNALS, the scientific material for which is supplied by medical institutions and scientific organizations in the Washington Metropolitan Area. For the CHILDREN'S HOSPITAL CENTENNIAL NUMBER the Editorial Board is indebted to Dr. Judson G. Randolph, Surgeon-in-Chief, Children's Hospital, who secured the papers which appear in this issue.

The Pediatric Intensive Care Unit

CHESTON M. BERLIN, M.D.*

THE CHILDREN'S HOSPITAL of the District of Columbia is a 220-bed hospital dedicated to the total care of the pediatric patient. Within the last 15 years, paralleling the rapid advances in medical technology, an increasing number of children with complex medical problems have been treated at this hospital. In 1965 an initial survey was taken of the daily patient census to determine how many children either were requiring, or really needed continual and intensive medical and nursing care. In this hospital with 12,000 admissions per year, and an average daily census of 150, at least 3 patients per day were found to be in need of intensive care. Accordingly a 4-bed unit was established to provide this type of care. In less than 10 months after this unit was opened in 1965 another survey revealed that there were more patients on the general wards requiring intensive care than could be accommodated in this I.C.U. The I.C.U. was nearly always filled to capacity and was caring for 25 patients per month. The need to revise and enlarge the Unit was clear.

The present Intensive Care Unit at Children's Hospital was opened in December, 1968; space was planned for 9 patients and associated monitoring and nursing care equipment (figure 1). This is the Unit to be described in detail in this report.

Description of Unit

The present I.C.U. contains 985 net square feet and has bed space with oxygen and suction outlets

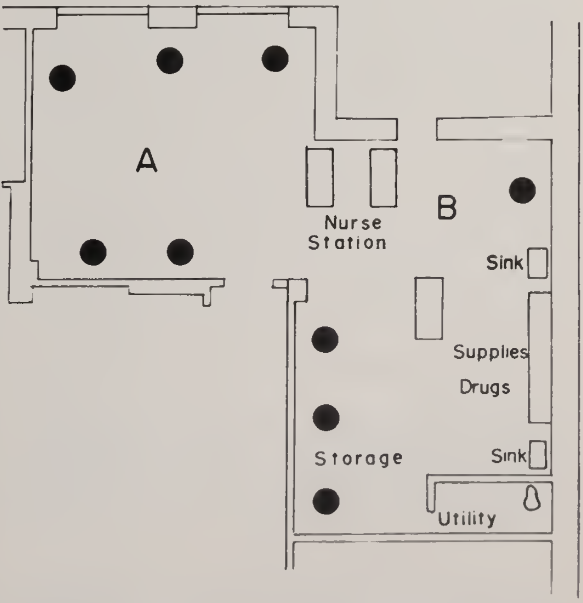

FIG. I Floor Plan of the Intensive Care Unit.
● = Bed Location.

FIG. 1

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* John and Mary Markle Scholar in Academic Medicine; Director, Intensive Care Unit, Children's Hospital, 2125 13th Street N.W., Washington, D.C. 20009; Assistant Professor of Pediatrics, George Washington University.

for 9 patients. At the present time it has a capacity for 7 patients. Two patient areas are used for storage and patient overflow.

In general, younger patients are placed in section A of the Unit and older patients in section B, where they may have more privacy. All beds are easily visible from the central nurses' station.

Each bed is equipped with oxygen and suction outlets and monitors to display ECG tracings and heart rate. One monitor will provide continual read-out of arterial systolic and diastolic pressure. Another monitor is an apnea alarm system. There is a defibrillator in the Unit at all times. Respirators are stored outside, but nearby the Unit and can be delivered within minutes.

Admission

Any medical or surgical patient who is seriously ill and needs continual intensive nursing and medical care is admitted to the Unit. Also admitted to the Unit is any patient, regardless of severity of illness, who might be expected to have a sudden change in clinical condition. This would include certain postoperative surgical patients as well as selected medical patients.

Patients are cleared through either the chief medical or chief surgical resident or their designate. Should the I.C.U. be filled to capacity, a determination (if possible) is made whether any patient may be safely transferred to his original ward. If not, arrangements are made for care (including special nurses) of the new patients on the appropriate ward. This is a rare occasion and is almost always confined to diseases which cannot be admitted to the I.C.U. for contagion reasons. A list of illnesses which preclude admissions are seen in table 1.

TABLE 1: Diagnoses Excluded from the I.C.U.

- Diarrhea of any type
- Some viral diseases (mumps, measles, chickenpox)
- Cavitary tuberculosis and/or tuberculous meningitis
- Current smallpox vaccination
- Draining wounds or abscesses

Diseases with a significant rate of communicability are obviously excluded. These include the common viral illness of children (mumps, measles, chickenpox), cavitary tuberculosis, diarrhea of any etiology, recent smallpox vaccination (crust present), and draining wounds or abscesses. Patients with congenital rubella are admitted, but pregnant women (nurses and physicians) are not permitted in the Unit unless they have positive rubella titers.

Children with meningococcemia have been cared for in the I.C.U. without waiting for 24 hours of treatment to pass. It is clearly recognized that this approach is controversial. The infectivity of the meningococcus in a closed population, e.g., a military camp, is well known. However, it has not been demonstrated that hospital personnel are at a similar risk. After thorough discussion with all services involved and with the Infectious Disease Control Committee it was decided to place these patients in the I.C.U. upon admission. This was done because of the critical nature of this illness during the first 48–72 hours when continual monitoring is required, particularly to detect early intravascular coagulation and/or septic shock. To date only 2 out of 12 patients with meningococcemia have died in the I.C.U., and both of these patients were moribund prior to admission. Personnel having direct care of these patients are cultured, and if positive and the meningococcus is sensitive to sulfa drugs, receive prophylaxis. A program is now contemplated to test all I.C.U. personnel for antibodies to meningococcus and if negative to receive the type C vaccine recently developed by the U.S. Army at the Walter Reed Medical Center.[1] Meningitis due to other organisms is not considered to be contagious under usual circumstances.

Patients who are chronic carriers of potentially or actually pathogenic organisms (pseudomonas, *Staphylococcus aureus*) are not considered contagious unless the organism comes from a draining wound. These patients ordinarily will be admitted to the Unit unless there is already present in the Unit a child who is at high risk for infection. Included in this latter category are children with leukemia and patients receiving corticosteroids or immunosuppressive therapy.

The future I.C.U. in the new Children's Hospital will have isolation rooms to accommodate those patients currently excluded from the present I.C.U. These are particularly needed for patients with severe gastroenteritis.

Personnel

The I.C.U. is staffed with 9 registered nurses and 6 LPNs. The concentration of very ill patients in 1 area allows for better nursing planning on the general wards. Special nurses are seldom needed. Over-all responsibility for medical care and education lies with the medical officer, who is a pediatrician and member of the fulltime hospital staff. It is his responsibility to supervise medical care, formulate administrative policies, and provide a climate for continuing medical education.

There are 2 ways to provide house-staff coverage for patients in the I.C.U. One is for a resident from the general ward to cover those patients who ordinarily would be admitted to his floor. This has the advantage of continuity of care; the disadvantage is that a single critically ill child may consume all of the resident's time. The second way is a separate rotation through the I.C.U. The medical service has tried this alternative. The medical resident was assigned to the I.C.U. and had responsibility for only the medical patients. Patients belonging to the surgical service and surgical specialities were covered by the appropriate resident from the wards. This system has 2 major defects. The medical residents have been unsatisfied without responsibility for all the patients in the I.C.U., surgical as well as medical. There was a break in continuity of care when the patient was transferred to the I.C.U. These 2 reasons plus increased manpower requirements require coverage of medical (as well as surgical) patients by the resident from their respective floor prior to transfer to the I.C.U. The advantage of a separate I.C.U. rotation lies with its educational content. Since the daily census is 4 to 5 patients, and usually only 2 to 3 are medical, the ratio of education to service is high. This should mean optimal time for learning of a disease in great depth with the use of a very ill patient with changing condition as a model. Physicians in training today are very service-minded, and hence such a rotation is not popular. Hopefully, future scheduling and increased size of the resident staff will allow such a luxury as part of the training program.

There is a continual interplay between the various services on patients who clearly required joint medical and surgical care. An excellent rapport has been established; there have been no disagreements over patient care which have not been easily settled with a quick on-the-spot conference. Therefore, teaching opportunities as well as quality of care have been magnified.

Clinical Experience

During the first year of operation of the present I.C.U. (Jan.–Dec., 1969) there were 505 patients admitted; 279 (55 per cent) were surgical and 227 (45 per cent) medical. About 5 per cent of total patients are actually joint medical/surgical patients, and, although primary responsibility formally lies with the surgical service, joint consultations occur for major clinical decisions.

Patient census has remained relatively constant with increased emphasis on elective surgical procedures during the summer vacation. The average census was 4.1 patients per day (58 per cent occupancy). The average patient stay in the Unit was 3.1 days.

Illnesses treated in the I.C.U. are listed in table 2.

TABLE 2: Diagnostic Categories of I.C.U. Patients

MEDICAL PATIENTS (total 227)	Number	Per cent of Total Medical Patients
Respiratory (pneumonia, asthma, bronchiolitis, croup)	69	31
Ingestions	28	12
Congenital heart disease	28	12
Infections (non-contagious)	23	10
Other	78	35
TOTAL	226	100
SURGICAL PATIENTS (total 279)		
Cardiovascular surgery	87	31
Abdominal (G.I.) surgery	65	23
Neurosurgery	40	15
Other	87	31
TOTAL	279	100

The most frequent surgical conditions were thoracic and cardiovascular surgery, major abdominal surgery, and neurosurgery. The most frequent medical conditions were respiratory (asthma, bronchiolitis, croup), ingestions, and congenital heart disease.

The mortality rate was 10 per cent. This compares to a mortality of 14 per cent in the initial 4-bed unit. Mortality figures are unreliable as an index of quality of I.C.U. care. In general, a high quality I.C.U. attracts more difficult cases with higher intrinsic mortality. An institution which is a major medical center with a high quality I.C.U. will attract an increasing number of difficult cases. New techniques will be tried and heroic efforts expended. It is not unexpected to see mortality rates increase instead of decrease as the I.C.U. is developed. Table 3 shows the distribution of death

TABLE 3: Deaths in the Pediatric I.C.U.

Age	Number of Admissions	Number of Deaths	Per cent Mortality
Newborns (less than 1 month)	72	22	31
1 month to 12 months	125	15	12
13 months to 5 years	156	8	5.0
5 years and older	152	5	3.2
Total	505	50	

by age in our I.C.U. Forty-five per cent of the patients who died were younger than 1 month, and 74 per cent were younger than 1 year. Per cent mortality for age varied from 31 for infants less than 1 month of age to 3.2 for all children over the age of 5. This reflects primarily the very high incidence of severe congenital anomalies in the newborn period. Table 4 lists the deaths by disease.

TABLE 4: Causes of Death in the Pediatric I.C.U.

Congenital anomalies (except cardiovascular) – early deaths*	9
Congenital anomalies (except cardiovascular) – late deaths†	2
Cardiovascular malformations – post-surgery	6
Cardiovascular malformations – without surgery	7
Infection (non-contagious)	5
Respiratory distress syndrome	3
Trauma	3
Hemophilia	2
Miscellaneous	13
Total	50

* age less than 1 month

† age greater than 1 month

Fifty per cent of deaths can be attributed to congenital malformations. The other 50 per cent are rather evenly distributed over a wide range of diagnostic categories. One-third of the patients who died were moribund on admission, and it is doubtful whether any therapy would have been successful.

Education

Each patient in the I.C.U. is considered a superlative opportunity to study in depth a particular pathologic condition during a period of rapid clinical change. For example, constant attendance to, and monitoring of a patient with asthma provides a unique opportunity to learn pulmonary physiology, acid-base balance, respiratory mechanics, and autonomic pharmacology. Attending rounds are made each morning and whenever necessary on a particular patient. Subspeciality rounds depend on the diagnosis and are usually made several times per day. A teaching file for both physicians and nurses has been established and continually supplemented.

Psychological Aspects

A particularly valuable experience is observing and handling the patient's and his family's emotional reaction to serious illness. Occasionally this becomes a critical issue. The psychiatric service is consulted on all teen-age ingestions. Their expertise is also required in handling parents who become extremely anxious about their child. These occasions have been very maturing experiences for the entire staff.

The emotional problems of patients in the I.C.U. have been well documented for adults.[2–4] In pediatrics, parents and other family members have to be considered as well as the patient. Every attempt is made to provide a reassuring atmosphere to the child in spite of the urgent situation. Toys, especially a child's favorite, are encouraged. Television is permitted for those patients who are able to enjoy it. Screens are used to afford privacy, especially to older children and adolescents. They are especially necessary during an arrest or death. Visiting privileges have been liberalized. Initially, only parents were allowed to visit and visiting time was restricted to 5 minutes per hour. This has been altered to a more flexible arrangement. Grandparents and parent surrogates are also allowed to visit. Visiting may be any time during the 24 hours, and is restricted only when visitors may interfere with the function of the I.C.U. These times are primarily during rounds, change of nursing shifts, peak loads of nursing and medical care, and during arrests or sudden changes in the status of any patient in the I.C.U. which require extensive management. In general, parents have been extremely coöperative when asked to leave or restrict their time. They understand and appreciate the high quality of care. On many occasions a parent sitting at the bedside of a very young child or a very ill older child lends considerable emotional support and also frees a nurse for other duties.

Telephone calls are accepted only from parents on a 24-hour basis. This is done both for privacy and to avoid disruption of the Unit. Parents have also been very coöperative about this.

We have recognized a clear-cut "I.C.U. syndrome", primarily in younger children (18 months to 6 years) but also occasionally in older ones. They become withdrawn, do not speak, and are extremely passive. They may cry only with significant pain and then only briefly. This is alleviated only partially by increased parent contact, familiar toys and books, and prompt return to their regular ward when the clinical condition permits. Sleep deprivation is a factor, and attempts are made to dim lights at night unless constant attendance is mandatory. Adolescents present a particular problem. It is recognized that screening off the teen-ager, while helpful, is seldom sufficient. They hear and see a great deal. The staff tries to be very discrete, but

(*Continued on page 493*)

The Association of Juvenile Diabetes Mellitus Chronic Lymphocytic Thyroiditis, and Antithyroid Antibodies

WELLINGTON HUNG, M.D., F.A.A.P.,* MICHAEL LEE, M.D.,†
AND GILBERT P. AUGUST, M.D., F.A.A.P.‡

CLASSICALLY, it has been thought that juvenile diabetes mellitus results from an absolute deficiency of insulin secretion due to severe inadequacy of function of the beta cells. Recent studies have shown that the sera of recent-onset juvenile diabetics show an insulin-like activity that is normal or even higher than normal.[1,2] In addition, the pancreata of juvenile diabetics who die soon after the clinical onset of their disease contain large islets.[3,4] Such observations cause us to examine whether the inadequacy of the beta cells is indeed primary and suggest the possibility that other factors are involved.

The detection of antithyroid antibodies in children and adolescents with diabetes mellitus[5,6] and the reported concurrence of the clinical association of juvenile diabetes with known autoimmune diseases such as chronic lymphocytic thyroiditis[7,8] suggest that an immune disturbance may play a role in the pathogenesis of some cases of juvenile diabetes. We are aware of only 1 report which describes in detail the presence of chronic lymphocytic thyroiditis in a child with diabetes mellitus.[9] The diagnosis of chronic lymphocytic thyroiditis was made at the time of autopsy in this patient. We are reporting a family in which diabetes mellitus, chronic lymphocytic thyroiditis, and circulating thyroid antibodies were present in different siblings. This family may lend support to the conjecture that autoimmunity plays a role in the pathogenesis of juvenile diabetes mellitus.

Methods

Oral glucose tolerance tests were performed by administering glucose, 1.75 gm./kg. of body weight. Blood samples for glucose and insulin were obtained by venipuncture at zero, 30, 60, 120, and 180 minutes. Blood glucose was determined using the glucose oxidase method. Plasma insulin was assayed by a modification of the double antibody radioimmunoassay procedure of Morgan and Lazarow.[10]

Studies to detect antibodies against thyroglobulin were measured by the hemagglutination technique, antibodies against thyroid-cell cytoplasm were measured by the indirect Coons technique, antiadrenal antibodies were measured by the indirect Coons technique, and antibodies against parietal cells of gastric mucosa were measured by the indirect Coons test.[11]

Report of Cases

PARENTS. The father, a 37-year-old man, had diabetes mellitus since 15 years of age. There was a strong paternal family history of diabetes but no family history of thyroid disease or anemia. The father had not lived with the family for several years and was not available for study.

The mother, a 33-year-old woman, had no history of diabetes, anemia, or thyroid disease. There was no family history of these disorders. A goiter was not detected on physical examination. Results of her thyroid and antibody studies are listed in table 1. An oral glucose tolerance test in February 1970 showed no evidence of diabetes (table 2).

SIBLINGS: Patient 1. C.R.C., a 12-year 4-month old boy, had diabetes since 6 years of age. This was controlled with regular and NPH insulins. An asymptomatic goiter was detected by a physician at 11 years 10 months of age. He had entered puberty and was euthyroid. Results of his thyroid and antibody studies are listed in table 1. A thyroid biopsy in January 1970 showed chronic lymphocytic thyroiditis. Desiccated thyroid therapy resulted in a decrease in the size of the goiter.

Patient 2. R.C., a 10-year 5-month old girl, had an asymptomatic goiter for "many years". She had been taking an unknown amount of desiccated thyroid with no apparent change in the size of the goiter. Thyroid therapy had been stopped for at least a year before she was seen by us. She was found to be euthyroid. Results of thyroid and

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TABLE 1: Antibody and Thyroid Studies

	Mother	Patient 1	Patient 2	Patient 3	Patient 4
Protein-bound iodine (ug%)	5.8	4.6	5.8	5.0	6.6
Thyroxine iodine (ug%)	4.5	3.5	5.8	4.1	4.5
Antibodies					
Thyroid					
Indirect Coons	+	+	+	+	+
Agglutinating	+	+	+	+	−
Gastric parietal cells	−	−	+	−	−
Adrenal	−	−	−	−	−

antibody studies are listed in table 1. The hemoglobin was 15.1 Gm. and the hematocrit 41 per cent pre-operatively. A biopsy of the goiter in January 1970 showed the presence of chronic lymphocytic thyroiditis. The patient was placed on desiccated thyroid therapy to decrease the size of the goiter. An oral glucose tolerance test in February 1970 showed no evidence of diabetes (table 2).

Patient 3. C.C., a 14-year 7-month old girl, had had diabetes since 3 years of age. This was controlled with regular and NPH insulins. Menarche occurred at 12 years of age, and the menstrual periods were regular. There was no thyroid enlargement; she was euthyroid. Results of thyroid and antibody studies are listed in table 1.

Patient 4. D.C., a 15-year 11-month old girl, had no thyroid enlargement or any abnormal physical findings. Menarche occurred at 12 years of age, and the menstrual periods were regular. Results of thyroid and antibody studies are listed in table 1. An oral glucose tolerance test in February 1970 showed no evidence of diabetes (table 2).

TABLE 2: Blood Glucose and Serum Insulin Values*

		Fasting	½ hour	1 hour	2 hours	3 hours
Mother	Glucose	65	158	102	83	88
	Insulin	30	53	51	46	43
Patient 2	Glucose	72	169	128	98	84
	Insulin	34	89	109	67	49
Patient 4	Glucose	80	150	124	102	68
	Insulin	18	109	110	91	67

*Glucose expressed as mg% and insulin as μU/ml

Discussion

There are suggestions in the literature that autoimmunity may play a role in the pathogenesis of diabetes mellitus in some children. One of these suggestions is based upon the pathohistologic findings in the pancreata of juvenile diabetics and in recently published experimental animal studies.

Gepts[4] found inflammatory infiltrates in and/or around islets in 15 of 22 acute (diabetes was diagnosed for less than 6 months) cases in children who died from diabetes. He did not observe infiltrates in the pancreata of children with chronic diabetes. These inflammatory infiltrates are similar to those seen in experimental animals rendered diabetic with anti-insulin serum or by immunization with insulin. Grodsky et al[12] found infiltration of the islets and interlobular stroma with lymphocytes in rabbits made diabetic by immunization against bovine insulin. These investigators were also able to detect insulin autoantibodies in the rabbits. Lacy et al[13] found inflammatory infiltrates with eosinophils and lymphocytes around and within the islets of Langerhans in rats made diabetic by intravenous administration of anti-insulin serum from guinea pigs. Renold et al[14] observed pronounced and extensive lymphocytic infiltrates in the islets of cows given long-term administration of homologous insulin. These changes are not dissimilar to those seen in other tissues involved by autoimmune processes such as the thyroid and adrenal cortex.[15]

Mancini et al[16] demonstrated the presence of antibodies to human insular tissue in the serum of a young diabetic who never received insulin.

The possibility has been suggested by Roy and colleagues[17] that an abnormal insulin characterizes the individual destined to develop diabetes. These authors reviewed the evidence for an autoimmune mechanism directed against insulin-producing cells which might be triggered by the production of an abnormal insulin and which might thereby lead to destruction of these cells.

Thyroid antibodies as detected by the indirect Coon method were found in 13.3 per cent of 83 juvenile diabetics by Landing et al.[6] This is well above the incidence of 1.1 per cent found in euthyroid non-diabetic children by the same investigators, who found chronic lymphocytic thyroiditis to be present in 2 of 11 apparently euthyroid diabetic children at autopsy.

R.C., Patient 2, was the only member of our family with detectable gastric parietal-cell antibodies. Such findings have been reported by Moore and Neilson.[18] These workers investigated 83 patients with diabetes mellitus who did not have anemia or thyroid disease for antibodies to thyroid or gastric mucosa. They detected complement-fixing antibody to thyroid and to gastric mucosa in 17 and 22 per cent respectively of their diabetic patients. This is in contrast to incidences of 4 and 8 per cent respectively in their matched controls. These investigators considered that their results "reinforced suggestions that immune processes may be responsible for some features of diabetes, particularly in the younger patient".

Irvine et al[19] detected gastric parietal-cell antibodies in 12 per cent of 174 patients with diabetes mellitus but without anemia or thyroid disease and in 31 per cent of patients with chronic lymphocytic thyroiditis. This is in contrast to a 5 per cent incidence in their control subjects. They suggested that "the presence of gastric parietal-cell antibody in the serum is almost invariably associated with hypochlorhydria and frequently with histamine-fast achlorhydria and a corresponding reduction in the concentration of parietal cells in the gastric biopsy specimen and with an abnormally heavy degree of lymphocytic infiltration in the gastric mucosa". Their findings are very similar to those of Roitt et al[20] who found an incidence of 32 per cent of gastric parietal-cell antibodies in 394 patients with chronic lymphocytic thyroiditis.

It is not unexpected that the mother and siblings without goiters in our family had circulating thyroid antibodies. Surveys of close relatives of patients with chronic lymphocytic thyroiditis have shown that approximately 50 per cent of them have circulating thyroid autoantibodies.[21]

The oral glucose tolerance test results on the non-diabetic members of our family were all normal. These results rule out the possibility that chemical diabetes mellitus might have been present. The insulin responses during the glucose tolerance tests were also normal and similar to those previously reported for non-diabetic adults and children.[22–24]

Mention has been made of the association of autoantibodies and diabetes mellitus. Further indications that some cases of juvenile diabetes mellitus may be an autoimmune disease is provided by the occurrence of diabetes in association with some diseases which are accompanied by organ-specific autoantibodies. These diseases include chronic lymphocytic thyroiditis and idiopathic Addison's disease. The association of Addison's disease and diabetes mellitus has been recognized with increasing frequency in recent years.[25,26] Solomon et al[27] in 1965 reviewed the world literature covering coexistent Schmidt's syndrome (thyroid and adrenal cortical insufficiency) and diabetes mellitus. They suggested that there was a more than chance relationship to these 3 endocrinopathies occurring together. In addition, they reported 8 patients from the Johns Hopkins Hospital with Schmidt's syndrome and diabetes. It is noteworthy that 7 of the 8 patients had antibodies against either adrenal or thyroid tissue or both.

The various studies reviewed in this paper suggest that some cases of juvenile diabetes may be due to an autoimmune disorder. The observations that support this hypothesis are that (1) the pancreata of children with the recent onset of diabetes have a histologic appearance similar to that of other tissues involved by autoimmune processes, such as round-cell infiltration, fibrosis, atrophy and epithelial-cell changes; (2) antibodies against other tissues, particularly the thyroid, are often found in juvenile diabetes; (3) similar pancreatic lesions to those seen in recent onset diabetes can be produced by injection of heterologous anti-insulin serum or heterologous or homologous insulins; and (4) autoantibodies are formed in certain animals following injection of heterologous insulin.

The occurrence of juvenile diabetes mellitus, chronic lymphocytic thyroiditis, and the presence of thyroid antibodies and gastric parietal cells in our family, together with the evidence summarized from previous studies suggest the possibility that some cases of juvenile diabetes and chronic lymphocytic thyroiditis are etiologically related and may be genetically determined. We suggest that both of these diseases may be the result of autoimmune processes. Further work is required to prove whether autoimmunity is of importance in the pathogenesis of juvenile diabetes mellitus.

Summary

We have reported a family in which juvenile diabetes mellitus, chronic lymphocytic thyroiditis, and circulating thyroid antibodies were present in some siblings. We believe that this family history may lend support to the conjecture that autoimmunity plays a role in the pathogenesis of juvenile diabetes mellitus. The literature has been reviewed concerning the observations that suggest that some cases of juvenile diabetes mellitus may be due to an autoimmune disorder.

Acknowledgement

We are indebted to Dr. Robert M. Blizzard, Johns Hopkins Hospital, for performing the antibody determinations.

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Corrective Surgery for Congenital Cardiovascular Anomalies[*][†]

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AND LOWELL W. PERRY, M.D.[||]

FEW AREAS of surgical endeavor are as dramatic or as rewarding as the complete correction of congenital heart defects. Not only is a child restored to health and well-being, but also the family may be returned to a normal living pattern.

This report reviews 200 cases of congenital heart disease with complete correction at Children's Hospital between 1966 and 1970. Palliative or noncorrective procedures are not included.

Method

Patients are generally above 20 pounds, preferably 30 to 40 pounds for complete correction with cardiopulmonary bypass. Ideally, the patient should be 5 to 7 years of age, except for aortic stenosis and coarctation of the aorta when pre-teen or early teenage is ideal.[1,2]

Initially we used the cardiopulmonary bypass system with the DeBakey-type roller pumps with a rotating disc Kay-Cross oxygenator. In 1968 the oxygenator was changed to a Bentley-type bubble device which has functioned quite satisfactorily. Flow rates approximating 100 c.c. per Kg. of body weight are used for optimum perfusion. Caval blood is obtained with gravity flow, and return is to the ascending aorta.

Postoperatively venous pressures are maintained at approximately 17 to 20 cm. of water in order to obtain optimum cardiac output. Administration of digitalis is not a routine procedure but is instituted when necessary.

Tracheostomy has been a useful adjunct in the postoperative care of lesions such as the tetralogy of Fallot and also in infants and children incapable of coöperation in clearing of tracheobronchial secretions.

Antibiotic coverage in the postoperative period has been used routinely for periods of approximately 10 days. Diuretic therapy has been employed as indicated.

All patients except for those with typical patent ductus arteriosus, typical coarctation of the aorta, and typical vascular rings were studied pre-operatively by cardiac catheterization and angiocardiography.

Results

Results obtained with corrective procedures on specific lesions are listed in table 1. Of the 200 patients, 119 or 60 per cent were corrected with extracorporeal circulation. The total survival rate was 95 per cent. Of the 119 patients who had open heart repair, 91.6 per cent survived. All of the 81 patients who had closed heart repair survived. The ages of patients in this series are shown in table 2.

TABLE 1: Complete Correction of Congenital Heart Disease at Children's Hospital, 1966-1970

	Cases	Survivors	Per cent Surviving
Patent ductus arteriosus	44	44	100
Atrial septal defect	38	38	100
Ventricular septal defect	24	22	92
Coarctation of aorta	23	23	100
Tetralogy of Fallot	20	15	75
Aortic stenosis	14	14	100
Pulmonic stenosis	12	11	92
Vascular rings	7	7	100
Total APVD*	5	3	60
Anomalous pulmonary window	3	3	100
Partial APVD* (intact septum)	2	2	100
Sinus of Valsalva fistula	2	2	100
Coronary artery fistula	2	2	100
Cor triatriatum	2	1	50
Left atrial myxoma	1	1	100
Tricuspid stenosis	1	1	100
	200	190	95

*Anomalous pulmonary venous drainage.

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[*] This work was supported in part by grants from the Washington Heart Association.

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TABLE 2: Age of Patients Undergoing Complete Correction of Congenital Heart Disease*

	Age in Years					
Procedure	<1	1.1–3	3.1–6	6.1–10	>10	Total
Open	3	13	48	39	16	119
Closed	25	23	11	13	9	81
Total	28	36	59	52	25	200

*119 OPEN REPAIR, Survival 91.6 percent; 81 CLOSED REPAIR, Survival 100 percent.

Specific Surgical Procedures

General indications for surgery, surgical techniques employed, and the need for cardiopulmonary bypass for specific lesions are listed in table 3.

Thirty-eight cases of atrial septal defect are included in this series–25 of the ostium secundum type, 5 of the sinus-venosus type, and 8 of the ostium primum variety. All of the cases of sinus-venosus type defect had a partial anomalous pulmonary venous drainage.

Of the 24 ventricular septal defects, direct suture of the defect was done in 5 in which the margin of the ventricular septal defect was fibrous and could be approximated without tension. Teflon® or Dacron® prosthetic patches were employed for closure of the rest. Moderate right-ventricular outflow obstruction was resected in 3 patients at the time of the repair of the ventricular septal defect.

Permanent heart block has occurred in only 1 child who maintains a ventricular rate of 70 per minute. Of the 4 patients with multiple ventricular septal defects, 1 has a residual small left-to-right shunt. The series included 3 patients with previous banding of the pulmonary artery: corrective surgery included removal of the pulmonary band, plastic repair of the pulmonary artery, and closure of the septal defect. One of the 2 deaths in the series occurred in this group. The other death occurred in a child with pulmonary hypertension.

The age of 8 to 12 is optimum time for repair of coarctation of the aorta. Hypothermia to 32°C is employed in order to protect the spinal cord against injury during the period of aortic occlusion. In cases with inadequate collateral arterial blood supply, partial left atrial-femoral bypass may be needed.

Resection of the coarctation and end-to-end anastomosis is the optimal surgical procedure. Insertion of synthetic patches to repair a long hypoplastic isthmic segment is sometimes required.

TABLE 3

Lesion	General Indication For Surgery		Surgical Procedure	Cardiopulmonary Bypass
Patent ductus arteriosus	Presence of lesion with left-to-right shunt			Standby in cases over 12
Atrial septal defect	Qp/Qs*>1.5/1		Division of small defect-sutures Large defect-patch Mitral repair in some ostium primum	Yes
Ventricular septal defect (VSD)	Qp/Qs*>2/1 No pulmonary vascular disease		Small defects, especially muscular-sutures; Large defect-patch	Yes
Coarctation of aorta	Presence of lesion		Resection Left subclavian patch plus synthetic patch	Standby
Tetralogy of Fallot	Presence of lesion Hematocrit <60	PS	Resection of indundibular obstruction Division of commissure of valve Patch to widen outflow tract	Yes
		VSD	Patch	
Aortic stenosis	Peak systolic gradient >80 Syncope or arrhythmia Left ventricular strain		Hypothermia or anoxic arrest Excision of ridge supra or subvalvular Incision of valve	Yes
Pulmonary stenosis (PS)	Right ventricular pressure of 80 Congestive heart failure		Resection of infundibular obstruction Incision of valve	Yes

*Pulmonary blood flow (indexed)/systemic blood flow.

The left subclavian artery may be used as a pedicle patch across a narrow isthmus in moderate coarctation or in the very small child.

Of the 23 patients with coarctation, 4 had bicuspid aortic valve, 2 had patent ductus arteriosus, and 4 had hypoplasia of the isthmus. One patient had an associated ventricular septal defect which will be repaired later.

Palliative systemic pulmonary shunts are performed on children who weigh less than 20 pounds and have the tetralogy of Fallot. All correction is done with cardiopulmonary bypass with primary attention to relief of the infundibular obstruction with secondary repair of the ventricular septal defect. The infundibular obstruction is resected. If valvular obstruction is present, the valve is inverted into the ventricle and the commissures divided. With a hypoplastic pulmonary-valve annulus a large prosthetic patch is inserted to widen the annulus, and moderate pulmonary insufficiency is unavoidable. It is necessary to patch the ventricular defect which is invariably large. Careful preoperative assessment of hematologic status is important to minimize the occurrence of a consumptive coagulopathy.

Of the 20 patients operated upon for correction of tetralogy of Fallot, 6 had previous shunt procedures which required closure prior to the institution of the cardiopulmonary bypass.

One patient died several weeks postoperatively from toxic hepatitis. Another died from postoperative bleeding secondary to uncontrollable chest wall and mediastinal hemmorhage. Three deaths occurred from inadequate cardiac output postoperatively. No deaths have occurred since 1968.

Four of 6 patients who had previous shunt operations survived, and 13 of 16 children without previous systemic-pulmonary shunts survived.

Of 14 patients operated upon for aortic stenosis, either hypothermic or ischemic arrest with coronary perfusion was used in 13. Hypothermic cardiac arrest with iced saline slush is employed if there is a question regarding the integrity of the valve in order to permit replacement if this proves necessary.

Relief of the obstruction is obtained in the supravalvular lesions by carefully excising the intimal ridge and placing a combination patch of pericardium and Dacron® in the vertical incision which extends several cm. distal to the base of the non-coronary sinus. With obstruction at the valvular level, care is exercised in extending the available commissures to within 1 or 2 mm. of the aortic annulus in order not to produce aortic insufficiency.

Subvalvular discrete fibrous stenosis is carefully resected in the anterior and medial aspects, and the anterior leaflet of the mitral valve avoided.

Of the 14 children with aortic stenosis, 10 were of the bicuspid valve type and were repaired by incising the available fused commissures. Two obstructions were supravalvular. Two patients had subvalvular discrete fibrous stenosis.

Of the 14 children operated upon because of pulmonary stenosis, 9 had valvular stenosis, 2 had infundibular stenosis, and 3 had combined lesions. One 10-month-old child was operated upon as an emergency because of severe refractory cardiac failure and ventricular tachycardia which did not respond to medical therapy. He died.

Miscellaneous Abnormalities

Of the 7 vascular rings included in this series, 4 were double aortic arches which were repaired by division of the smaller of the 2 arches. Two children had a right aortic arch with a left ligamentum arteriosum which was divided in a similar manner. One child had an anomaly of the innominate artery which arose to the left of the trachea, ascended to the right and severely compromised the lumen of the trachea at its mid-region. This was repaired by anterior fixation of the innominate vessel together with a modified plastic repair of the right aspect of the trachea.

Two children with coronary artery fistulas to the right ventricle were corrected by dissection and excision of the terminal aneurysmal branches.

Two unusual cases of partial anomalous left pulmonary venous drainage to a left vein entering the innominate vein and an intact atrial septum were surgically corrected. Closed procedures were performed by making an extremely large anastomosis of the common left pulmonary veins to the posterior aspect of the left atrium.

Of the 5 cases of total anomalous pulmonary venous drainage, 1 drained below the diaphragm, 3 drained at the cardiac level to the right atrium, and 1 drained into the coronary sinus.

A fistula of the sinus of Valsalva to the right ventrucular outflow tract was successfully repaired with the aid of the cardiopulmonary bypass.

Cortriatriatum was successfully repaired in an 11-pound infant.[3] A 13-year-old child died early in the postoperative course after total repair. There were extremely high pulmonary artery pressures pre-operatively, and autopsy disclosed the presence of severe pulmonary vascular sclerosis.

An 8-year-old girl survived resection of the atrial septum for removal of a large left atrial myxoma which produced the symptoms of severe mitral valve obstruction and insufficiency. It was necessary to perform also a mitral annuloplasty in order to minimize the serious degree of mitral insufficiency present. The atrial septum was then repaired with a Dacron® patch.

A single case of tricuspid stenosis was repaired by incision of the commissures.

Conclusion

Two-hundred cases of cardiovascular abnormalities in infants and children have been reviewed and current concepts of their surgical correction presented. Based on this experience, surgical correction of this group of abnormalities is recommended at an early age. Open cardiac repair is now available at this institution for all children over 20 pounds in weight and for selected infants under 20 pounds.

Pre-operative complete cardiac catheterization and angiocardiography are recommended in the pediatric age group for most intracardiac defects and abnormalities of the great vessels.

Survival rate for the total series was 95 per cent. Deaths occurred only in the patients undergoing open cardiac repair. This series includes all patients needing complete correction, but does not include those who needed only palliative surgery and some who were not surgical candidates.

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there are unavoidable occasions when the adolescent observes an arrest or hears comments on his own condition which cause great anxiety. Accordingly, plans for a new I.C.U. in the future Children's Hospital include single rooms for the older child and adolescent.

Summary

The medical care of critically ill patients is facilitated by the concentration of personnel and equipment into a single Intensive Care Unit. The quality of care and education is enhanced by having patients of all disciplines together. The care of critically ill children demands a wide range of experience in normal and abnormal physiology and is dependent on the close coöperation of medical and surgical services. The quality of care and teaching is enhanced by having patients of all disciplines together. The need for continual monitoring and treatment of their clinical conditions requires the concentration of these patients in a single Intensive Care Unit.

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Progress in Cystic Fibrosis at the Children's Hospital of Washington, D.C.

LUCAS L. KULCZYCKI, M.D.*

DURING the last 15 years Children's Hospital of the District of Columbia has conducted clinical and research studies on more than 300 children with cystic fibrosis. In 1961 the Care, Teaching and Research Center in Cystic Fibrosis was founded in order to organize and intensify the approach to this problem.

This paper is a review of the progress made at the Center over the last 9 years and will show the value of centralized facilities in caring for children with this disorder.

Clinical Features of Cystic Fibrosis

Cystic fibrosis (CF) is a congenital familial disease transmitted through an autosomal gene whose full-blown manifestations have been studied thus far for about 30 years but the genetic and biochemical implications of the disease are not fully known. However, it is known that all exocrine glands have a basic dysfunction causing them to secrete an abnormal secretion: non-mucus glands secrete abnormally high amounts of electrolytes; mucus-secreting glands secrete very viscid mucus.

The clinical manifestations result from these abnormal secretions. During a heat spell heat exhaustion can occur as a result of the excessive salt loss with sweating. Pancreatic insufficiency and multilobular biliary cirrhosis may occur because viscid mucus blocks acini and obstructs ducts in these organs. Pulmonary atelectasis, emphysema, pulmonary infections and fibrosis, meconium ileus, and mucus impactions result from the collection of this abnormal mucus along the mucosa of the respiratory and gastrointestinal tracts. Other manifestations of this disease include serous otitis media, pansinusitis, recurrent nasal polyposis independent of an allergic etiology, and rectal prolapse.

Diagnosis

During the last 9 years more than 3,750 children have been examined in the Center because their clinical state resembled some aspect of this systemic disease. At the time of referral these children have an extensive medical and family history taken, a detailed physical examination, and applicable screening tests such as the silver agar plate imprint test and the stool gelatin trypsin test. Two-hundred thirty-eight children have had the diagnosis established and have been treated here. Diagnostic measures included the sweat test, pancreatic enzymes analyses, chest X-ray films, and pulmonary function tests. Other helpful studies, when indicated, included radiograms of the paranasal sinuses and bone-age evaluation, specific intestinal absorption studies, and intestinal mucosal biopsy. However, all children whose sweat, collected through the use of pilocarpine iontophoresis, was found to contain elevated amounts of electrolytes, were subjected to doudenal intubation for collection and analyses of pancreatic enzymes before the diagnosis was verified.

In the average clinical situation it was found that the sweat test and pancreatic enzyme analysis were sufficient to confirm the diagnosis. It has been shown in studies performed here at the Center (to be reported elsewhere) that the sweat of newborn babies may have an elevated concentration of electrolytes during the first 2 to 3 days following which there is a return to normal.

Therapy of Cystic Fibrosis

The basic therapeutic principles of good nutrition and adequate pulmonary drainage to relieve obstruction and prevent infection may appear to be simple. However, daily therapeutic performance is extremely challenging to the patient, his parents, and medical and paramedical personnel.

Adequate nutritional compensation is not an easy task since the degree of pancreatic insufficiency and resultant malnutrition cannot be defined in a precise manner. In addition, varying amounts of fecal masses accumulate throughout the colon, augmenting the degree of malabsorption and contributing to several nutritional deficiencies such as minerals and Vitamins A and K.[1] Therefore, the amount of pancreatic-enzyme supplementation and the addition of vitamins, minerals and occasionally bile salts is determined empirically and adjusted according to the clinical response.

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To promote adequate drainage of respiratory-tract secretions and to reverse the patient's faulty breathing pattern, extensive preventive and therapeutic steps are necessary. Instruction in corrective breathing and frequent daily bronchopulmonary toilet measures are the most important measures in the pulmonary rehabilitation of these children. The home-care program of these children includes the use of a tent during sleeping hours with mist created by either an ultrasonic transducer or a jet nebulizer, propelled by an electric compressor, and intermittent periods of inhalation of aerosolized 10 per cent mucomyst (N-acetylcysteine) followed by postural drainage from 2 to 4 times daily.

The bacterials flora of the respiratory tract plays a significant role in the morbidity of these children. Repeated nose and throat cultures of 124 children with CF as shown in table 1 reveal that Pseudomonas and/or *Staphylococcus aureus* are usually present. Particular attention has been given to the antimicrobial sensitivities of these pathogens as a guide to therapy. In our Center chloramphenicol and ampicillin have been used most frequently during the last 9 years, but more recently carbenicillin and gentamycin have shown promising results. Daily oral antibiotics have been prescribed for some children with more advanced disease, but these agents are used only during periods of intercurrent infection in the children with good pulmonary function. The use of aerosolized 3 per cent kanamycin or 5 per cent neomycin by inhalation following postural drainage is prescribed also as part of the home-care program of most children with pulmonary involvement.

TABLE 1: Results of NP Cultures from 124 children with Cystic Fibrosis

Pathogens	Percent of Patients
Pseudomonas and *Staphylococcus aureus*	33
Staphylococcus aureus only	26
Pseudomonas only	11
Staphylococcus aureus plus other pathogen	16
Pseudomonas plus other pathogen	14

In order to carry out these laborious therapeutic measures the Center has utilized in a team approach professional personnel from many departments and sections of Children's Hospital. These include surgery, anesthesiology, cardiology, radiology, laboratory, inhalation therapy, physiotherapy, nursing, social services, and child psychiatry. In fact, the team extends beyond the confines of our institution to include public health nursing and social services, professional personnel of the Georgetown Pediatric Pulmonary Program, and personnel and facilities at the Hospital for Sick Children.

Table 2 illustrates not only the activity of the Cystic Fibrosis Center but also the results of this concentration of effort upon the mortality rate. It is our impression that this decreasing mortality rate is due to the following factors: (1) the concentration and coördination of effort by the Center's staff, (2) the continued involvement of many disciplines on the team providing a more accurate and detailed clinical and laboratory evaluation of the child's pulmonary and nutritional status, (3) frequent review and adjustment of the patient's home-care program, including health education of the family, (4) the proper and judicious use of antimicrobial agents to control infection, and (5) new therapeutic measures aimed at promoting drainage of bronchial secretions. It is our impression that the most important new therapeutic measure in prolonging the lives of these children has been the use of bronchoscopy and bronchial lavage. For this reason a more detailed description of our experience in the Center is presented here.

Bronchoscopy and Bronchial Lavage (BBL)

Fifty-three children have been subjected to 80 BBL procedures in an attempt to improve their pulmonary function. Based upon the experience gained in this study, the indications for this procedure can be divided into 2 groups: the emergency group who have acute respiratory distress with hypoxia, and the elective group who have evidence of increasing over-inflation of the lungs as evidenced by poor weight gain, persistent adventitial sounds on auscultation, persistently elevated white blood cell count, a decline in pulmonary function, and a worsening in the radiographic pulmonary findings,

TABLE 2: Activity in Cytic Fibrosis Center

Year	1962	1963	1964	1965	1966	1967	1968	1969	1970*
No. of C.F. patients	44	66	79	94	110	125	114	116	118
No. of CF. clinics	24	98	101	100	97	94	138	219	90
No. of visits	254	430	448	440	618	644	629	713	272
Ave. visits/child	5.8	6.5	5.7	4.7	5.6	5.1	5.5	6.1	2.3
No. of deaths	4	4	4	6	4	0	0	1	0
% of deaths	9.1	6.1	5.1	6.4	3.6	0	0	0.9	0

* First 4 months only.

TABLE 3: Bronchoscopy and Bronchial Lavage Results

Year	New Patients	Patients Recalled	Number of BBL	Clinical Evaluation – Initial–Recent					
				Excellent	Good	Mild	Moderate	Severe	Died
1965	6	0	11	0-0	0-3	2-1	2-0	2-0	2
1966	9	0	9	0-2	0-2	6-2	2-1	1-0	2
1967	5	0	6	0-1	1-1	1-2	3-1	0-0	0
1968	14	2	19	0-2	0-3	10-10	5-1	1-0	0
1969	10	7	23	0-2	0-2	5-11	9-1	3-0	1
1970*	9	3	12	0-2	2-4	5-3	2-3	3-0	0
TOTAL	53	12	80	0-9	3-15	29-29	23-7	10-0	5

* First 4 months only.

including persistent segmental atelectasis. There were 17 children who underwent 27 BBL procedures in the emergency group; 50 children who underwent 53 such procedures comprised the elective group. Table 3 shows the results of these procedures. Clinical evaluation of each patient by 2 or more observers at different times was performed and each patient was placed in 1 of the following categories: excellent–no apparent pulmonary involvement, good–minimal, mild, moderate, and severe pulmonary involvement. Five patients, 2 in 1965 and 1966 each and 1 in 1969, have died; all of these were in the emergency group, had severe involvement and were moribund on admission. However, they received immediate relief, and survived several days to weeks after the procedure. The remainder of the patients were re-evaluated recently, and the results are shown in table 3.

These preliminary results lead us to believe that the BBL procedure is a significant contribution to the improvement of children with CF. More extensive studies and more objective criteria for evaluation of a patient's improvement are being formulated at this time so that more objective conclusions can be made. Nevertheless, it is our impression that this procedure, to be maximally effective, should be performed prior to the appearance of severe pulmonary involvement.

Implications for the Future

Our experience indicates that when the CF patient's nutritional requirements are met and his pulmonary status improved he has a vastly improved prognosis. Most of our patients are leading a normal and active life. Seventeen patients are between the ages of 16 and 28 years. One patient has completed college; 3 are attending college; 2 are employed in gainful occupations. Three patients are married.

With the increasing longevity of patients with CF, the coöperation of medical, social, educational and vocational agencies is extremely important so that these victims can make a successful adjustment in society.

Summary

Nine years experience in the Care, Teaching and Research Center for Cystic Fibrosis at the Children's Hospital of D.C. has been briefly reviewed and shows that cystic fibrosis is a controllable disease; its successful management depends upon a well-organized team of medical and paramedical disciplines.

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Rehabilitation of Children with Acquired Hemiplegia

A Report on 47 Children Seen at the Children's Hospital between 1967–1968

GLORIA D. ENG, M.D.*

ACQUIRED HEMIPLEGIA is a medical reality of significant incidence in children. The Department of Physical Medicine and Rehabilitation at Children's Hospital of D.C. evaluated and treated a total of 187 children with cerebral palsy during the years 1967-1968 inclusive, of whom 47 were acquired hemiplegics. A retrospective statistical analysis of the data will not be attempted here because the time lapse is still too brief for definitive appraisal of the outcome. Emphasis in this presentation is on medical and rehabilitative management of the children with acquired stroke.

Etiology

In our series, the head-trauma, fracture-group comprised the largest number; 23 children sustained injuries in automobile accidents or received direct blows on the head from ball-bats or falls. Nine children had brain damage as a complication of infection, i.e., meningitis, encephalitis or brain abscess. Embolism secondary to congenital heart disease, thrombosis associated with sickle-cell disease, homocystinuria, and other unknown factors accounted for 8 children with hemiparesis. Arteriovenous anomalies existed in 4 children. Hemophilia with cerebrovascular hemorrhage occurred in 1 child, and 2 suffered from intracranial tumors. Since 1968 we have included leukemic infiltration or hemorrhage, Todd's paralysis following intractable seizures, and parasitic lesions in the brain as additional causative factors.

Our children ranged from 6 months to 17 years of age. There was no sex preponderance. Of the 47 patients, 5 died during the years of study.

Illustrative Cases

Case 1. A 7-year-old white girl fell over the handlebar of her bicycle in July 1968. She lost consciousness momentarily, then became extremely somnolent and vomited profusely. Emergency examination and radiographic studies of her skull showed no abnormality. By the 2nd evening her stupor increased and a dilated right pupil resulted in her immediate hospitalization. An epidural hematoma on the right side associated with tearing of 1 of the meningeal arteries was discovered. Herniation of 1 of the temporal lobes through the falx was recognized at surgery. A stormy, comatose postoperative course ensued. Eight weeks later the child was first seen in the Department of Physical Medicine and Rehabilitation at Children's Hospital. She was disoriented, demonstrating overt apraxia, an improving aphasia, a severe left hemiparesis and a less involved right hemiparesis, and was not ambulatory. A medial rectus palsy on the right and diplopia were discovered. She had marked extraneous movements of the left upper extremity which she controlled by steadying the arm with the less involved right upper extremity. Increased tendon reflexes, bilateral upgoing Babinski responses, and sustained ankle clonus were present. She manifested emotional flares, inappropriate responses, and morbid preoccupation with injury and death.

Four months after the injury the patient was walking with the assistance of a left short-leg brace and a twister to control internal rotation of the hip and varus of the foot (figure 1). Truncal stability was much improved, and the previous proprioceptive difficulties in terms of feet placement were less pronounced. Speech had improved except for a low-pitched voice. However, a dystonic writhing of the left extremities became more obvious. Diazepam was prescribed which lessened the involuntary movements. Because of her persistent bizarre behavior which included emotional lability, religious preoccupation, indiscriminate showing of affection, biting of herself, and aggressive slapping of others, psychiatric consultation was requested. The impression was personality disorder secondary to organic brain syndrome, and a trial of chlorpromazine was begun, coupled with interviews with the child and the parents. Since the latters' anxiety and anger were difficult to resolve, continued supportive counselling was required.

Six months post-injury, psychologic evaluation was attempted. The Stanford-Binet IQ was 74, and Columbia Mental Maturity Scale 72. Tests of reasoning and abstract thinking were most difficult, whereas visual-perceptual discrimination and verbal recognition were more readily accomplished. Personality evaluation still showed preoccupation with

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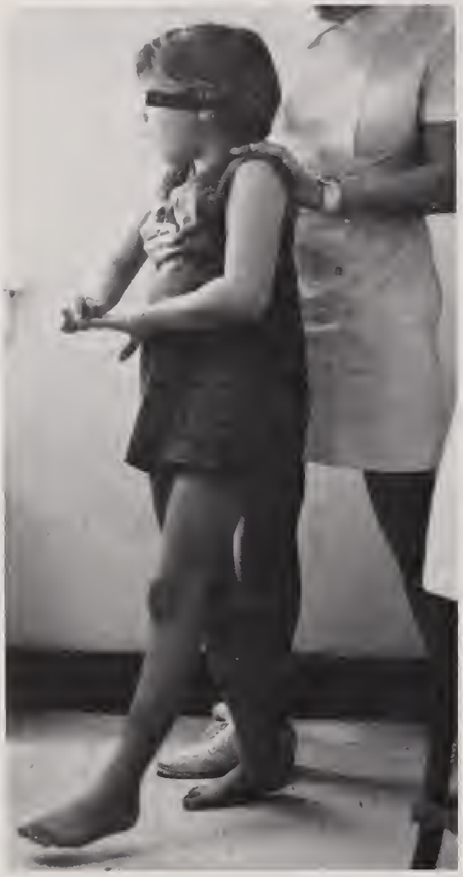

FIG. 1. Case 1. Child walking with left short-leg brace and twister.

mutilation and death and exaggerated dependency needs.

She was admitted to a handicapped children's class in March 1969, where she made no significant gains academically but demonstrated lessening aggressive behavior and more socialization with the other children. A phenol block was done in May to reduce the spasticity of the left gastroc-soleus, but this had no effect on the dystonic component and she could ambulate with stability only while in her brace. One year post-injury the patient showed general improvement and a subsidance of her emotionalism, and had developed a more responsible attitude toward herself and her family. Because of a persistent right parietal sharp-wave focus she was maintained on diphenylhydantion. The dystonia was partially controlled on diazepam, and the psychiatric aspect of her problem was allayed somewhat by chlorpromazine.

Case 2. A.M. was first seen at the age of 6 years, 3½ months following the acute onset of right hemiparesis and aphasia. She was pulling her sled up a hill in the snow when she fell down and could not move her right side. Immediate hospitalization with a complete neurologic work-up including arteriogram failed to reveal any definitive cause for the hemiplegia. It was presumed that the child had a cerebrovascular accident in the distribution of the left middle cerebral artery. At the time of her initial visit her speech had returned considerably and except for minimal dysarthria she conversed well. Facial weakness, apparent at the onset, was minimal. The hemiparetic side showed flaccidity, and there was subluxation of the shoulder. The hand was clenched and exhibited loss of 2-point discrimination and position sense, but she could still discriminate textures and identify small objects. The lower extremity muscles were very weak, and the child could not maintain her balance on the affected side without support of her long-leg brace and a quadripod cane in the opposite hand (figure 2).

Fifteen months following the stroke the loss of stereognosis in the hand was much more apparent. There was greater strength in the lower extremity, but a short-leg brace was still necessary to counteract the weak dorsiflexors and evertors of the foot. Because of persistent proprioceptive loss she still slammed her foot down and locked her knee on heel-strike. Leg-length discrepancy was obvious. However, the patient was attending school and was independent in self-care activities.

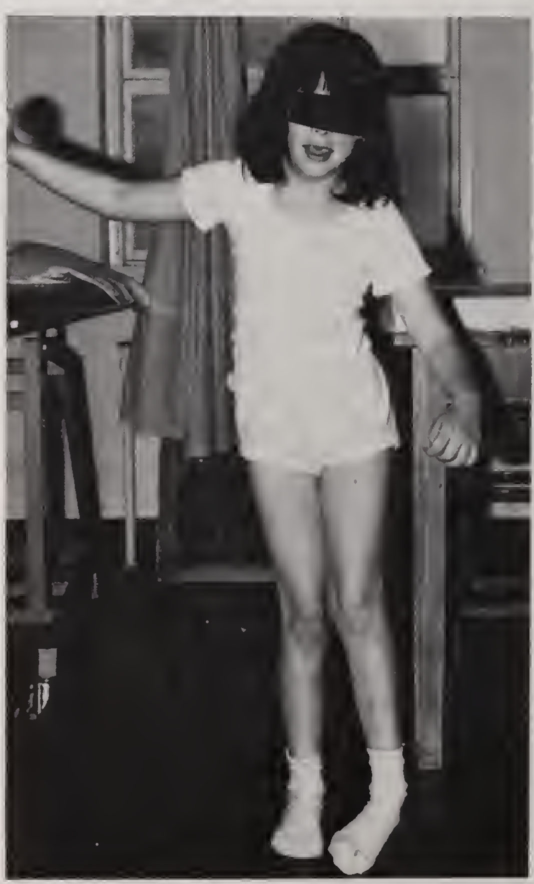

FIG. 2. Case 2. Balance on affected side maintained with long-leg brace and quadripod cane.

Psychologic evaluation at this time showed no distractibility or hyperactivity. The child still showed difficulty in word-finding which reflected in her test scores – on the Wechsler scale, Verbal IQ - 87; performance IQ -111; full-scale IQ - 99. She performed best on tasks of practical thinking and immediate memory for digits. Placement in a small learning-disability class with special non-pressurized tutoring in visual-motor, speech and language development, and basic academic skills was arranged. The child has apparently adjusted well to her disability and is making academic and social gains.

These 2 cases serve to illustrate the complexity of care and suggest involvement of many professional disciplines.

Acute Phase

The neurologic state of the children at the onset of the stroke was constantly changing. The patients were frequently confused, disoriented, or comatose. Hemiparesis was minimal in some, complete in others. Diagnostic studies performed on them included skull X-ray films, electroencephalogram, cerebrospinal fluid dynamics and analysis, arteriography, pneumoencephalography on occasion, and brain scan. Maintenance of blood pressure, oxygenation, control of seizures, and anticoagulants judiciously employed for thrombosis or embolism were usually necessary. Neurologic intervention in depressed skull fracture, subdural or epidural hemorrhage, or extirpation of space-occupying lesions was necessary in over one-half of our patients.

During the intensive care of these patients the physical therapists, in coördination with the nursing staff, began passive and gradually active range of motion exercises, with support and placement of extremities to prevent contractures and deformity. The comatose patients frequently required postural drainage and tracheal toileting to maintain clear airways. Frequent turning prevented skin breakdown.

As the patients improved, tilting on the tilt table, dangling of the legs at bedside, and sitting were begun. Disturbances in verticality became apparent in some children. They tended to lean to the affected side, and the problem was aggravated if the room was darkened. Cranial nerve deficits were prevalent. (In Case 1 lateral rectus palsy, in Case 2 facial weakness). Some patients developed strabismus or amblyopia and others had hemianopsia which blotted out vision of objects placed on the affected side, creating problems in nursing and feeding. Diplopia was frequently unrecognized and often delayed getting the patient out of bed because of nausea and dizziness.

Some children had disturbances in body image with complete unawareness of the affected side. The occupational therapist was particularly helpful in the assessment of these body-image disturbances and in problems of eye-hand coördination. She initiated and encouraged early self-help activities. In cases in which dominance switching was inevitable she would divert activities to the unaffected hand, training the paralyzed extremity to act as an assistive hand.

Stabilization and Recovery

The recovery of the affected limbs was predicated on the duration of the flaccid stage: the longer the flaccidity, the poorer the recovery. Our observations are in agreement with Gowers[1] who stated in 1888, "The parts in which there is some return of movement before the end of 3 months will probably recover useful power. Paralysis that is complete at the end of 3 months will probably remain considerable in degree for the rest of life." Bax[2] said, "When the paralysis has lasted more than 1 week there will be residual defects in three-fourths of the patients." Despite good motor return in many children a profound sensory loss was even more disturbing. Loss of tactile discrimination, graphesthesia, and proprioception precluded functional use of the hands of some of our children. The proprioceptive loss in the legs created awkward gaits with heavy pounding steps and snapping of the knees, as seen in Cases 1 and 2. The degree of sensory loss was reflected in a proportionate severity of disuse atrophy in the involved limbs.

As the patients became ambulatory, problems of balance and coördination needed special therapeutic attention. Splints devised initially to prevent deformity yielded to more permanent bracing of persistent paralysis. Active and resistive exercises strengthened returning muscles. The prevention of contractures was frequently difficult because of the presence of severe spasticity. Phenol nerve or motor-point blocks as a temporizing procedure to alleviate this spasticity was successful in our hands, as in others'.[3–5] Minimizing spasticity and the involuntary athetoid, dystonic movements which occurred in some patients was occasionally possible with the use of diazepam.

Speech deficits do not hold the same gloomy prognosis in children as in adults. The speech pathologist usually was able to diagnose and prognosticate speech capabilities early in the course. He worked for tongue mobility, mucosal sensory awareness, oral closure, swallowing, breathing patterns and sound production, as well as object-naming. His awareness of the delicate balance between encouragement and the development of frustration in the aphasic patient guided his treatment regimen. About two-thirds of the children at the end of 2 years had normal to near normal speech. Acquired right hemiplegics tended to have more residual problems, particularly with aphasia of the expressive variety. Integrative aphasia may have been a problem initially but usually cleared, except in the severely retarded child.

Emotional lability was frequently encountered and needed considerate handling. Many children experienced serious and morbid depressions. Low frustration index led to acting out in the form of temper tantrums and behaviour problems. Psychiatric counselling was necessary for some. Agents such as dextroamphetamine or methylphenidate hydrochloride were occasionally helpful in the hyperactive, distractable child.

Residua

Retardation. As convalescence progressed, retardation as a sequela of the stroke was a reality which had to be faced and competently handled. Bax[2] stated that two-thirds of hemiplegics show below average intelligence, left more intelligent than right. In our group the integrative functions, judgment, and calculatory skills were less involved in the right hemiplegics, and since the problem of aphasia is not as serious or permanent in children as in adults the right hemiplegics seemed to do relatively well. Most of the school-age children were directed back to education levels suitable to the individual child.

Epilepsy. The other pertinent problem which could aggravate the existent mental deficiency is epilepsy. Because it is known that epilepsy occurs in one-half to two-thirds of these children sometime in their lives,[2] alert monitoring of this possibility must be maintained. The EEG was abnormal in 26 of the 27 patients hospitalized during the acute phase in our hospital. About one-half of the other children seen during convalescence had abnormal EEG's, with overt seizures occurring in 5. Perlstein et al[6] claimed the EEG has predictive significance in at least the total group of cerebral palsied children. They assert that a normal EEG after 2 years of age is an almost perfect guarantee against epilepsy. Negative spikes at any age mean a 50 per cent chance of developing seizures later on. The significance of the EEG is a subject for much discussion. Relevant to our series, the outcome is still not determinable at this time.

Orthopedic Supervision. As the children grew, the need for orthopedic supervision became more obvious. Tight heel cords, varus or valgus deformity of the feet, internal rotation and anteversion of the hip, pelvic obliquity associated with leg-length discrepancy and resultant scoliosis required remediation. Most of the hand deformities, because of persistent loss of stereognosis, prohibited vigorous surgical intervention.

Prognosis

The children made their greatest recovery in the first few months to 1 year. Thereafter, there were meager but continuing gains which could be attributed to time and spontaneous growth and development. However, early management by members of the rehabilitative team who realistically appraise, plan and treat has undoubtedly obviated many complications which could have delayed recovery.

Most of the children were discharged to their homes relatively soon after stabilization occurred. The parents were involved in the rehabilitative process from the start. They were informed of the changing status of their children, the probable evolution of disability, and the ultimate degree of recovery which could be expected. Supportive counselling by the Social Service personnel or the physicians was frequently necessary. Liaison contact with the Health Department visiting nurses and therapists reinforced parental guidance in home care and follow-up evaluation.

The adolescent hemiplegic had a more difficult transition from hospital to home. He was usually more aware of the catastrophic nature of his stroke. His awkward physical state caused great anxiety and frustration. Persistent speech deficits usually aggravated an already untenable situation. He invariably required constant reassurance, psychosocial support, and realistic educational and vocational guidance. His parents needed extra time and attention to accept their child's handicaps.

Summary

In 2 years 47 acquired hemiplegic children have come under the surveillance of the Department of Physical Medicine and Rehabilitation of Children's Hospital. Detailed reports of 2 cases illustrate the global nature of the handicap, requiring multidisciplined coördinated care. Since life-spans in most of these children are in decades, and their general potential and adaptation is usually good, knowledgeable management should result in meaningful lives for them as they mature into adulthood. Parent

(*Continued on page 509*)

Five Years' Experience with Solid Tumors at Children's Hospital, Washington, D.C.

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THE PRACTITIONER of medicine must reorient his thinking concerning malignancy in childhood. During the past 2 decades the death rate from prematurity and infectious diseases in children has decreased, but that from cancer has increased. At present, cancer is the second largest cause of death in children. This group of diseases, therefore, has an ever-increasing importance in the pediatric age-group.

Leukemia and lymphomas are the most common malignant conditions comprising greater than 40 per cent of all childhood cancers. The major types of solid tumor in childhood in decreasing frequency are soft-tissue sarcomas, central nervous-system tumors, neuroblastomas, Wilms' tumor, bone tumors, and retinoblastoma (figure 1). The outlook for solid tumors in pediatrics is ever more optimistic with many cures being reported in certain types.

This article will review the experience of the tumor team and their approach and management of childhood malignancy at the Children's Hospital of the District of Columbia during the past 5 years, January, 1965 to December, 1969. This approach has been stimulated and assisted by participation in a coöperative children cancer-study group (CCSGA). The experience and current approach in the detection and management of selected tumors in children will be considered. Four types of solid tumors peculiar to childhood have been chosen for review: Wilms' tumor, neuroblastoma, rhabdomyosarcoma, and hepatoma. The 5-year experience (1965–1969) with solid tumors is shown in table 1.

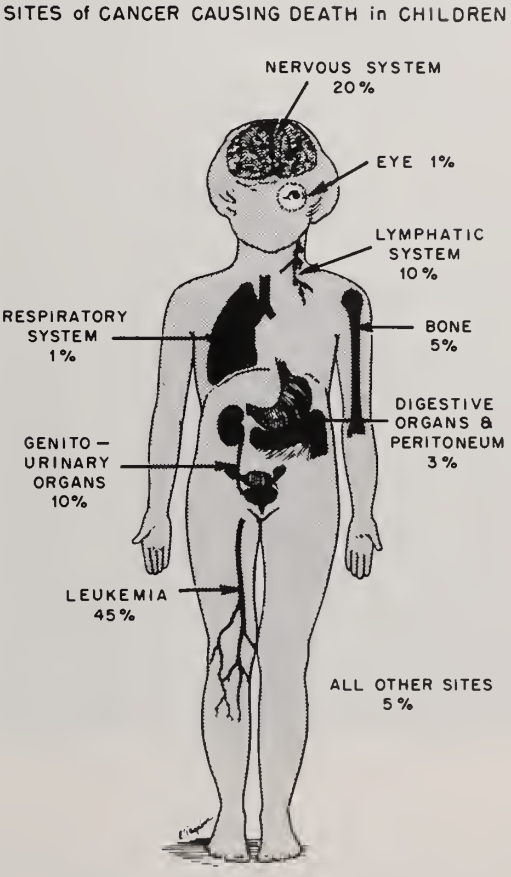

FIG. 1. Sites of cancer causing death in children.

TABLE 1: Number of Patients with Common Malignant Tumors Seen at the Children's Hospital of D.C. (1965–1969)

Year	Wilms' Tumor	Neuroblastoma	Rhabdomyosarcoma	Hepatoma
1965	5	6	2	1
1966	3	4	2	2
1967	6	5	3	1
1968	3	4	1	–
1969	4	9	–	2
Totals	21	28	8	6

Wilms' Tumor

Wilms' tumor or embryoma of the kidney is the most common abdominal tumor in young children. In our series the ages of the children with Wilms' tumor ranged from 6 months to 6½ years with a mean of 3 years. Males and females were equally affected. An abdominal mass in the flank extending well into the abdomen was present in every case (figure 2). Hematuria was found in only a minority of the children. The tumor is usually encapsulated but may penetrate the capsule to invade the renal vein, regional lymph nodes, and/or liver. The lungs are the most common site of distant metastasis. At the time of diagnosis 10 of the 21 patients exhibited a well-encapsulated, completely removable tumor. Regional metastasis to either the inferior vena cava, lymph nodes, peritoneum or liver were found in 6 patients. In 2 cases the tumors were bilateral. One patient had a ruptured tumor at the time of exploration.

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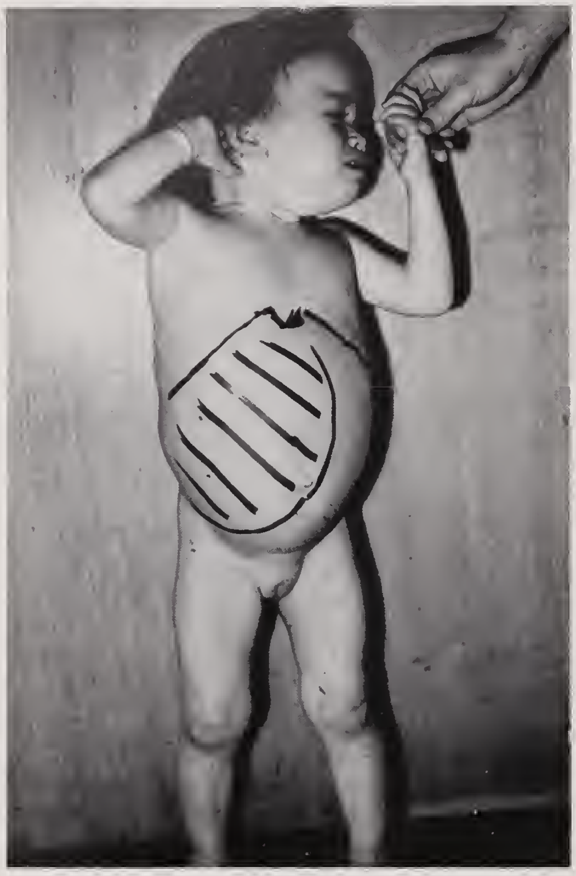

FIG. 2. Wilms' tumor with large flank mass.

Prior to surgery all patients undergo diagnostic laboratory and radiologic studies including a combined inferior venacavagram and excretory urogram, chest X-ray films, bone surveys, and bone-marrow examination for metastatic tumor cells. Although the last mentioned is performed without undue delay, it is not considered an "emergency" procedure.

Postoperative treatment includes X-radiation of the tumor bed as well as an initial course of actinomycin-D. Fifteen patients received, in addition, repeated courses of actinomycin-D for 15 months postoperatively according to the regimen established by the Children's Cancer Study Group A.

Current experience would indicate that the prognosis is generally favorable in most young patients with Wilms' tumor. Farber[1], in a review of the literature, found that up to 89 per cent of patients with localized tumors had a 2-year survival and could be considered "cured." To date 14 of our patients are alive (table 2). In this group 8 are alive and have been tumor-free for 2 to 5 years and therefore can be considered cured; an additional 6 patients have been alive for a period of 8 to 24 months with no recurrence of the tumor. Among the long-term survivors are included 10 patients who had no demonstrable metastases, 3 who had local spread, and 1 who had bilateral tumors. Of the 7 patients who died, 4 had metastasis at the time of diagnosis and lived from 3 to 20 months. One patient who had bilateral tumor lived 28 months. The prognosis is guarded when the renal vein or inferior vena cava, lymph nodes, and/or lungs are involved. However, even in these cases, with a combination of surgery, radiotherapy and chemotherapy, 2-year survivals and possible cure can be achieved in 58 per cent of the cases.[1]

TABLE 2: Survival of Wilms' Tumor Patients

Categories	No. of Patients	Alive	Dead	Per cent Survival
No metastasis at time of diagnosis	12	10	2	83
Metastasis at time of diagnosis	7	3	4	43
Bilateral tumor	2	1	1	50
Totals	21	14	7	67

The salutary effect of chemotherapy with actinomycin-D on pulmonary metastasis is shown in figure 3. Recently it has been shown that vincristine is also effective in controlling pulmonary metastases in patients with Wilms' tumor.[2] The full therapeutic potential of these drugs is still being explored.

Neuroblastoma

The neuroblastoma arises in the sympathetic nervous system and adrenal medulla.[2] It is a rapidly growing neoplasm showing various degrees of cellular differentiation and maturation. A ganglioneuroma is histologically mature and is considered a benign derivative of neuroblastoma.

This tumor is seen in infants and young children. The peak incidence is at approximately 2 years of age. The ages of our patients ranged from 3 weeks to 9 years with the mean of 2.3 years. There was no sex difference in our cases or in other reported series.[2] In our series 22 of 28 children had primary tumors located in the abdomen. The other sites of the primary tumors included the chest (3) and the neck (1); in 2 infants with disseminated tumor in the liver and subcutaneous tissues the primary site could not be ascertained. Two-thirds of reported cases and 24 of 28 patients in our series had metastasis at the time of diagnosis. Metastasis to the orbit results in exophthalmus and periorbital hemorrhage.

The initial diagnostic studies to determine the site and extent of disease include intravenous pyelogram, inferior venacavagram, bone survey, bone-marrow examination, and 24-hour urinary determination for VMA and other catecholamines. Complete surgical extirpation, partial dissection or biopsy was performed depending on the location, size and extent of the primary tumor. Postoperative radiotherapy to the tumor bed is supplemented by chemotherapy consisting of Cytoxan and vincristine. In these patients whose primary tumor could not be completely removed radiotherapy and/or chemotherapy were employed, and a second attempt was usually made to achieve complete surgical removal.

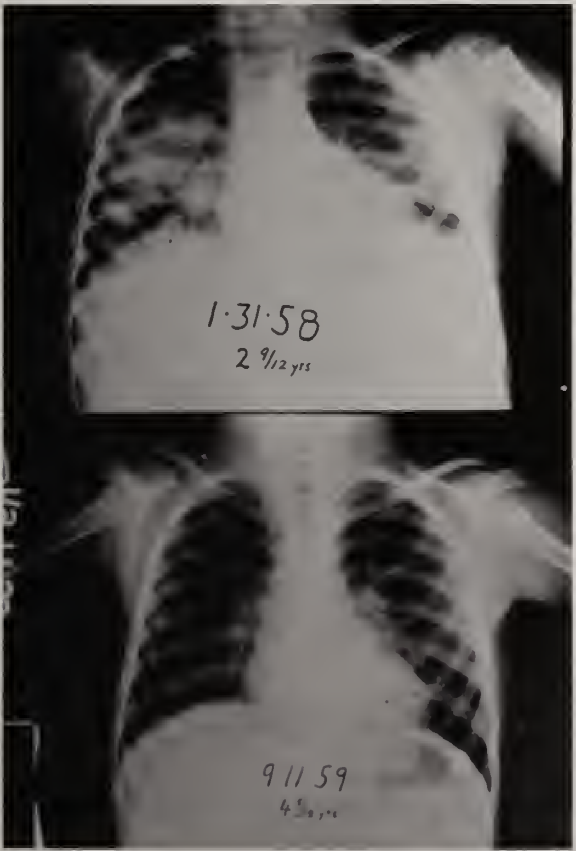

FIG. 3. Complete disappearance of pulmonary metastasis of Wilms' tumor by actinomycin-D.

The prognosis is primarily related to the age of the patient. Although children less than 12 months of age frequently have disseminated disease and massive involvement of the liver, subcutaneous tissue or bone marrow, prognosis in this age-group is most favorable, and 70 per cent have a 2-year survival.[3] Our results are identical with the reported series in the literature (table 3). The 17 patients who died had metastasis at the time of diagnosis, and the length of survival ranged from 1 to 24 months with a mean of 8.3 months. The site of the primary tumor has some bearing on survival. Neuroblastoma, appearing in the neck or chest carry a more favorable prognosis than in those orignating in the adrenal gland or retroperitoneum.[3] It may be that the appearance of a mass in the neck or the presence of respiratory symptoms led to an earlier diagnosis.

TABLE 3: Survival of Neuroblastoma Patients

Categories	No. of Patients	Alive	Dead	Per cent Survival
No metastasis at time of diagnosis	4	4	–	100
Metastasis at time of diagnosis	24	7	17	29
Age at diagnosis <12 mos.	8	6	2	75
Totals	28	11	17	40

Rhabdomyosarcoma

Rhabdomyosarcoma is the most common soft-tissue sarcoma in children. It arises from striated muscle and consists of cells possessing the characteristics of those of rhabdomyoblasts. Histologically the pleomorphic and alveolar forms are found in adults while the embryonal or botryoid type is more common in children. Rhabdomyosarcoma usually occurs in children under 10 years of age or in adults between 50 and 70 years of age. This tumor is more often found in males than in females (3:1 in our series). The origins of the primary tumors in the patients in our series were the upper extremity (2), the lower extremity (1), the pelvic area (2), the nasopharynx (1), the orbit (1), and the mastoid area (1). Metastases to the lymph nodes, lungs, liver, brain or bones occur early. At the time of diagnosis, 5 of our patients had demonstrable metastases and 3 had localized tumors. All patients underwent radical surgical removal of the tumor or amputation of the involved limb. Following surgery patients received radiotherapy and chemotherapy with a combination of Cytoxan, vincristine and actinomycin-D.

The prognosis is related to the location of the primary tumor and the presence of distant metastasis. Rhabdomyosarcomas of the orbit or distal extremities have a better prognosis because complete removal of the tumor is technically feasible, whereas tumors originating in the nasopharynx or pelvis do not lend themselves to complete surgical excision. The results of our series are shown in table 4. Four patients were alive from 18 months to 60 months with no evidence of tumor, although 2 had metastasis at the time of diagnosis. Four patients are dead. Three of these had metastasis at the time of diagnosis and survived for 2 to 10 months.

TABLE 4: Survival of Rhabdomyosarcoma Patients

Categories	Per cent of Patients	Alive	Dead	Per cent Survival
No metastasis at time of diagnosis	3	2	1	67
Metastasis at time of diagnosis	5	2	3	40
Totals	8	4	4	50

Hepatoma

Primary liver tumors produce a large abdominal mass. Anemia, low-grade fever, jaundice, and anorexia may be present. In addition to the routine pre-operative studies, a liver function profile, liver scan, and celiac arteriogram may aid in the diagnosis.

Hepatic resection offers the only hope for cure. Technical considerations include meticulous dissection of the portal triad and absolute control of vena caval flow. Postoperative management must focus on clotting abnormalities, hypoglycemia, and hypoalbuminemia, all of which may accompany major hepatic resections.

Despite a mortality rate of 15 to 30 per cent following hepatic lobectomy in children, one cannot overlook the fact that some children can be completely cured by surgery. At Children's Hospital there have been 6 lobectomies for primary hepatic malignancy over the last 6 years. Of these, 1 died as a result of early surgical complications. Two have subsequently died from pulmonary metastases. Three survivors are well and free of tumor at 4 months, 18 months, and 4 years after surgery. The latter 2 are considered cured.

Discussion

Malignant disease in children is more common than is generally appreciated. Physicians who are involved in the care of children should be alert to the possibility of malignancy in a child with an abdominal mass or a history of prolonged fever, weight loss, bone pain or fatigue. Early detection of cancer in children is especially important since the majority of localized tumors can be eradicated completely.

Basic laboratory and X-ray studies which are routinely employed in patients under evaluation for tumors include bone-marrow examination for metastatic tumor cells, bone survey or bone scan for skeletal metastasis, and inferior venacavagram for evidence of obstruction or invasion of the inferior vena cava. Aortogram or selective arteriogram may supplement this workup. Selective radio-isotope scan of the brain, lungs, liver and bones are also helpful for the detection of primary or metastatic lesions in these organs.

Any child suspected of having a malignant tumor should be seen in a medical center where the recommendations of a qualified team can be coördinated. Thus, a rapid and accurate assessment of the tumor can be made and the appropriate therapeutic measures taken. At our institution a tumor team consisting of a pediatrician, surgeon, radiologist, chemotherapist and pathologist has been established. Any patient with a malignant lesion is presented to this group where decisions concerning the management of the lesion are reached in concert.

The Children's Hospital continues to participate as a member of one of the largest cancer coöperative groups–Children's Cancer Study Group A (CCSGA). Several of the members of the tumor team are recognized investigators for that group. The participation of our institution in the efforts of the CCSGA in the management of children with malignant disease has contributed to the marked improvement in the survival statistics of children with cancer. This encouraging progress demands a constant vigilance by the practitioner and provides hope for a much more optimistic outlook in the future.

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Atypical Mycobacterium

Diagnosis and Management of Disease in Children and of Healthy Children with Positive Skin-Test Reactions

ANDREW M. MARGILETH, M.D., F.A.C.P., F.A.A.P.*

TUBERCULOSIS due to atypical mycobacterium (AM) is a potentially serious yet uncommon granulomatous disease in children.[1-4] For 4 years 40 children with doubtful PPD-S and/or positive Tine (OT) skin tests have been studied. When these patients were retested with PPD-S and AM antigens, the atypical antigens produced a larger reaction. Many children had been skin-tested during a well-child examination; 15 had cervical adenitis,[5] and 2 had pulmonary disease. Patients with a doubtful reaction to PPD-S or a positive Tine test may present a management problem because the clinical findings, pathogenicity, treatment and prognosis of disease due to *Mycobacterium tuberculosis* usually differ from those due to atypical mycobacterium.[1,4] This is a review of our experience as to methods of diagnosis and management of children with or without disease and positive AM skin tests.

Methods

Thirty-eight children were seen at the Children's Hospital of D.C. and 2 at Bethesda Naval Hospital between January 1966 and May 1970. All were referred by their family or clinic physician for study because of a weakly positive PPD-S or a positive Tine skin-test. The control group consisted of 20 of these children who showed no reaction to any of the mycobacterial skin-test antigens that we used. Each child had a history, physical examination, and chest X-ray film. Many had a complete blood count, throat culture, and urinalysis. Selected patients had skin tests for histoplasmosis or cat-scratch disease (CSD). Fifteen patients with cervical adenitis and 2 with pulmonary disease were hospitalized. Cultures were obtained from enlarged lymph nodes by excisional biopsy or aspiration.

Skin tests for AM or CSD were performed and read by me; Tine and PPD antigens were administered simultaneously. Induration was measured in 2 dimensions with a steel or plastic mm. ruler with a ball-point pen to mark the exact edge of palpable induration. All reactions were checked at 48 to 72 hours; many were rechecked at 96 or 120 hours. A positive Tine test considted of 2 or more prong areas of induration which coalesced; a doubtful test consisted of 1 or 2 mm. of induration only. PPD reactions were interpreted: positive, 10 mm. or more; doubtful 5 to 9 mm.; negative, 0 to 4 mm.

The PPD-S material was the commercial PPD-S, intermediate strength (5 TU). Atypical antigens† (5 TU) were: PPD-A, M. avium; PPD-B, M. Battey 100616; PPD-G, Gause 210; PPD-Y, M. kansasii 035; PPD-F, M. fortuitum 383. Antigens, 0.1 ml., were injected intradermally with a 26-gauge needle and a plastic disposable syringe. Tine (OT) was the commercial 4-pronged unit prepared with U.S. standard old tuberculin (OT). The imprint of 4 prongs was evidence of proper application. Cultures were planted on blood and chocolate agar, thioglycolate broth, and Lowenstein-Jensen media. TB cultures were incubated at 35–37°C in 5 to 10 per cent CO_2 for 8 to 10 weeks. Mycobacterium recovered were identified by the D.C. Public Health tuberculosis laboratory. Colonies of mycobacteria were classified according to Runyon's criteria.[2,4] Drug-susceptibility tests were made by the mycobacteriology unit of the Center for Disease Control in Atlanta.

Report of Cases

Case 1. A 4-year-old white girl was brought in with a left pre-auricular mass and submandibular node enlargement of 3 weeks' duration. The pre-auricular mass was tender, well circumscribed, fixed to the underlying tissue, and appeared to involve the parotid gland. A low-grade fever was the only associated sign. Examination was normal except for 2 cat scratches on the left cheek. Urinalysis, blood count, and chest X-ray film were normal. Both PPD-B and PPD-G were positive; the latter reaction persisted 96 hours. Tests for cat-scratch disease were negative. Biopsies of the 2 masses showed acid-fast bacilli (AFB) and a granulomatous reaction. Isoniazid (INH) and paraminosalicylic acid (PAS) were started in therapeutic doses.

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† Courtesy of L. B. Edwards, M.D., Director, Operational Research Section, Tuberculosis Program, DHEW, PHS, CDC.

Because the lesions remained unchanged after 3 months of therapy, total excision was performed. Examination of the submandibular node, an intraglandular node, and a portion of the parotid gland revealed acid-fast bacilli, granulomatous lymphadenitis, and sialadenitis. Following surgery therapy with INH and PAS was resumed. In the ensuing 4 months the child remained in excellent health and the operative site healed completely. Runyon III, M. Battey was cultured 10 weeks after surgery.

Case 2. A 9-year-old Negro boy died with disseminated tuberculosis due to *M. scrofulaceum*, Runyon II. He had been well until the age of 3 years when fever (105°F), weight loss, hepatosplenomegaly, dark urine, and jaundice developed. A chest X-ray film revealed right hilar adenopathy. *M. scrofulaceum* was cultured from a liver biopsy, bone marrow, and gastric washings. Therapy with INH, PAS and streptomycin (STM) was effective. Treatment was discontinued after 16 months. A cousin who had intimate contact with the patient had died 1 year before with disseminated mycobacterial infection.

The patient remained well until the age of 7, when cough and fever began. X-ray films revealed right upper lobe consolidation. In 10 days pleural effusion developed with right middle lobe involvement. Therapy with penicillin, cephalothin, chloramphenicol, and kanamycin (KMC) was ineffective. Following a lung aspiration, gastric washings, and a scalene node biopsy, STM, INH and PAS were administered with gradual improvement. All material showed *M. scrofulaceum* on culture. The pulmonary infiltrates decreased, and after 3 months the patient was discharged on triple therapy. At this time 5 AM antigens, histoplasmosis, and yeast tests were nonreactive, but a PPD no. 2 was positive. The patient returned to school for 7 months. Streptomycin was discontinued after 9 months.

At the age of 8, after taking INH and PAS for 13 months, the boy developed anorexia, fever, and right pleural effusion with right upper lobe consolidation. Treatment with cephalothin, STM, INH, and PAS were ineffective. The fever continued. There was an 8-pound weight loss. Bronchoscopy revealed active endobronchitis. Two months later complete consolidation of the right lung developed; bronchoscopy revealed complete occlusion of the right main-stem bronchus. Immunoglobulins revealed a high IgA (726 mg), and an IgG of 2,200 mg. The IgM was 116 mg. A nitroblue trizolum (NBT) test for neutrophile phagocytic activity was normal.

Skin tests with AM antigens showed a positive reaction to PPD-G. Cultures of gastric washings, blood, bone marrow, and lung aspirates were positive for *M. scrofulaceum*. Sensitivity tests showed resistance to INH, PAS, STM, KMC, rifampin, ethionamide, pyrazinamide, and ethambutol. When pericarditis developed, a trial of rifampin therapy (300 mg/day) was begun. Isoniazid, PAS and STM were stopped. After 4 months rifampin was discontinued because improvement was minimal. Cycloserine (250 mg/day) and pyridoxine (150 mg/day) were administered during the last 4 months. Weight loss continued, with fever, hypoalbuminemia, and severe anemia; numerous blood transfusions were necessary. The boy died with severe inanition, hyponatremia, and chronic diarrhea. Autopsy revealed *M. scrofulaceum* involvement of all organs, including the brain.

TABLE 1

Category of Patient		Individuals Showing Indicated Skin Reaction to Four PPD and Tine (OT) Antigens						
			Tine (OT)		PPD Positive Reactions			
		Total Patients	Pos.	Neg.	A	B	G	S
Controls*	Healthy	8	2	6	0	1	1	0
	Confirmed diagnosis of another disease	15	1	10	0	0	0	1
Patients*	Atypical mycobacteria; Cervical adenitis	15	11	2	2	5	8	0
Patients	Pulmonary atypical mycobacterial disease	2	1	1	0	0	2	0

* Chest X-ray films normal.

Results

Ages of the 40 children ranged from 1 to 16 years. Thirty were Caucasian, 10 Negro. Of the 15 with cervical adenitis 12 were Caucasian. Table 1 shows skin-test responses of 23 controls; 20 had negative reactions. Two healthy controls had positive reactions to Tine and AM antigens. Of the remaining 15, 1 had a positive Tine and PPD-S and recovered from *M. tuberculosis* meningitis. The 14 non-reactors were found to have another disease, e.g., histoplasmosis (1), CSD (2), thymic cyst (1), branchial cyst (1), lymphoma (1), and bacterial adenitis, (3).

The incidence of strains of AM causing cervical adenitis in our series (table 2) approximates those of Schaefer[3]; PPD-G occurred more often. All lymph nodes were unilateral; 7 patients had multiple matted nodes. Tender nodes were noted in 10 of 15 children. Duration of adenopathy ranged from 20 to 465 days, average 34 days in 12 patients. Fever (≥101°F) occurred in 5 of 15. Following incision and drainage 2 patients developed sinus tracts with intermittent drainage until total excision was effected (cases 7, 9). Of 8 patients who reacted to PPD-G, 4 cultured *M. scrofulaceum*; 1 cultured *M. fortuitum*, and 2 cultured *M. Battey*. Of 5 children who reacted to PPD-B, recovery of AM occurred in 2; positive identification was not possible. Cultures of bone marrow, gastric washings, and urines showed no growth except in case 17. Chest X-ray films, urinalysis, blood count and skin tests for histoplasmosis revealed normal or negative findings except in cases 16 and 17 with pneumonia.

TABLE 2: Positive Tuberculin Reactions in 15 Children with Cervical Lymphadenitis* Related to Mycobacteria: Culture Results and Biopsy Findings

Case Number	Reactions† to PPD Antigens					
Culture Results‡	S *M. tuberculosis*	Y (035) Runyon I	G (210) Runyon II	B(100616) Runyon III	F (383) Runyon IV	A *M. avium* (Weybridge)
No mycobacteria isolated or type not identified						
2	3	9	11	10	–	(12)
4	7	7	13	(14)	–	10
7	4	7	(14)	9	–	5
8	0	–	11	(15)	–	–
11	3	–	--	(22)	–	5
13	5	–	12	(15)	–	–
14	9	–	11	(19)	–	–
Runyon group II, *M. scrofulaceum*						
3	10	4	(21)	14	–	9
5	6	4	(12)	10	–	10
6	13	12	(18)	13	–	15
12	13	–	(23)	15	–	18
Runyon group III, M. Battey						
9	9	4	(13)	12	4	8
1	8	13	(19)	15	–	13
Runyon group IV, *M. fortuitum*						
10	6	6	(13)	12	7	7
M. avium, Weybridge						
15	4	–	4	7	–	(10)

* All biopsies showed granulomatous adenitis

† Millimeters of maximum skin induration at 48 - 72 hours; circuled numbers, induration persisted 96 hours

‡ Cultures obtained from lymph node by aspiration or excisional biopsy.

Two patients had positive skin tests for PPD-G and CSD.[6]

Four children received INH and PAS prior to culture; 5 were treated after node biopsy. Antituberculous therapy appeared to be ineffective.[7,8] All children were followed for 3 months to 3 years. No recurrence or other tuberculous disease was found in 15 patients with adenitis, in the healthy controls, or in case 16 with pneumonitis.

TABLE 3: Differentiation of Atypical Mycobacteria Infection from Human Tuberculosis

	Mycobacterium Tuberculosis	Atypical Mycobacteria
History of contact	Positive	Negative
Atypical skin test	Less than 10 mm.	10 mm. or greater
PPD-S skin test	10 mm. or greater	5 mm. or less
Chest X-ray film	Active pulmonary parenchymal disease	Usually negative
Lymphadenitis	Uncommon: usually bilateral	Common: unilateral
Virulence to guinea pig	Positive	Negative

Discussion

This series provided confirmation that cervical adenitis due to AM is a specific disease in children, and that AM pulmonary infections may be benign or serious depending upon response to therapy. Differentiation of atypical mycobacteria from human tuberculous infection is important and readily accomplished (table 3).[2,4] More than 40 per cent of healthy school children may have positive skin tests to AM antigens.[2,4] In certain areas of the U.S.[1–5] and overseas[9] lymphadenitis due to AM is being detected more often than infection from *M. tuberculosis*. During this study *M. tuberculous* adenitis was not observed, but 11 children were admitted to Children's Hospital with pulmonary or meningeal tuberculosis due to *M. tuberculosis*. Another 55 patients with lymphadenitis were found to have CSD.[6]

One important problem is the lack of availability of atypical antigens. Physicians may suspect AM infection if the Tine (OT) is positive and the PPD-S is doubtful. Following exposure a positive reaction should occur in 99 per cent of patients after an incubation period of 23 to 60 days. Rosenberg[4] emphasized the pitfalls of proper reading and interpretation of skin tests. Recovery of a specific atypical mycobacteria correlated well with the positive skin test (table 2). Family contacts should be tested. Thirty contacts of the children with adenitis were non-reactors; 2 mothers had positive Tine tests with doubtful PPD-S reactions and normal chest X-ray films.

Children reacting to the Tine test with a doubtful or positive test should be tested with PPD-S. If this reaction is doubtful, testing should be done with AM antigens, in addition to a physical examination and chest X-ray films. If no disease is found the patient should be followed at 1– to 3–month intervals to detect latent disease. We observed no disease in 2 healthy children with positive reactions to PPD-B and PPD-G; neither child was given antimicrobial therapy. If the PPD-S reaction is most positive INH is recommended for 1 year.[4,7,8]

If a child has chronic cervical adenopathy, e.g., minimal change after 14 days, and the PPD-S is doubtful with a positive reaction to AM antigen, excisional biopsy is the treatment of choice.[5,7] Culture of pus obtained by aspiration or of biopsy material is necessary to exclude *M. tuberculosis* and identify AM. Usually antituberculous therapy is not indicated unless pulmonary disease is present.[1,7,8] No benefit was observed in 6 children who received antituberculous therapy. Sinus tract drainage[5] has occurred during prolonged chemotherapy and following incision and drainage. Although this complication developed in case 7, surgical excision effected a cure (figure 1).

If pulmonary AM tuberculosis is identified, therapy should be based upon mycobacterial sensitivities of the patients' own organism to antituberculosis drugs; most AM patients show low susceptibility. *M. kansasii* infection frequently responds to antituberculous drugs. In severe disease, triple therapy, INH, PAS, STM or kanamycin (KMC) should be initiated pending culture results. *M. scrofulaceum* is usually sensitive to KMC and ethionamide, Battey, group III, to erythromycin.[8] Pulmonary infection caused by AM is more common in adults than in children.[1,4] Surgical

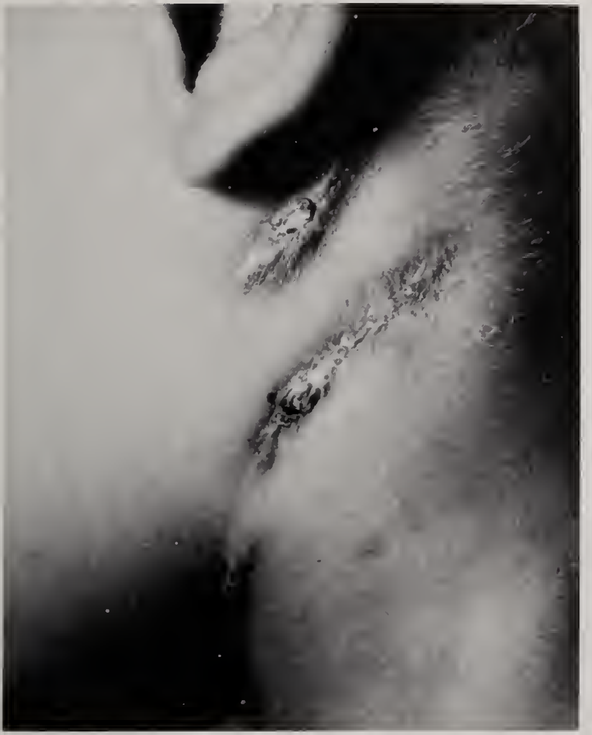

FIG. 1. Case 7, a 4-year-old boy with Runyon II adenitis and 3 sinus tracts. Incision and drainage, INH, PAS for 1 year, and rifampin were ineffective. Surgical excision effected cure.

resection,[10] an important consideration in the patient unresponsive to medical therapy, was considered in case 17.

In conclusion, careful appraisal of a child's history, examination, contacts and appropriate PPD skin tests correlated with mycobacterial cultures, chest X-ray films and close follow-up will usually provide an etiologic diagnosis in children with tuberculin conversion and/or adenopathy or pulmonary disease.

The assistance of Mrs. N. Hunt is acknowledged.

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Acquired Hemiplegia–Eng

(*Continued from page 500*)

education and realistic acceptance have proven to be important factors in the relative success of the rehabilitation program.

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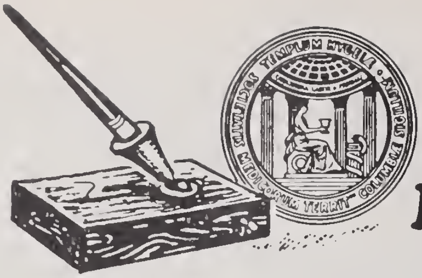

President's Page

COMMUNITY HEALTH WEEK

THOUGH INTEREST by the medical profession in the health needs of a community is an ever ongoing project, the week of October 18–24 is set aside to give attention to and appreciation of the total contributions made by all health workers.

The AMA House of Delegates called for such an annual program in 1962 and asked each state and county medical society to emphasize three major contributions of the medical profession and its allies in the health field: (1) advances in medical science and health, (2) improved quality and availability of health resources, and (3) leadership in fulfilling specific local health needs.

It is with these thoughts in mind that the Medical Society of the District of Columbia asks that all its members join with the allied professions during Community Health Week and help focus attention on the health needs of our community and how these needs should be met.

Specifically, your Society takes this occasion to examine its activities, making certain that our commitment to the community in time and energy is commensurate with the need. Activities this year include:

1. Multiphasic screening at the Medical Society building. An effort to instruct the community in the importance of preventive medicine.
2. Medical visiting teams of a physician, nurse and medical technician presenting career conferences at area high schools. The critical shortage of health personnel in all allied fields is well known to the medical profession, and must be brought to the attention of the public.
3. Concentrated effort through local T.V. and radio to disseminate information regarding activities of physicians within the community, how they relate to community health problems, and how the community may afford itself of these efforts.

To obtain the objectives as stated above by the AMA and to promote the local activities requires much time and effort by the members of our Committee on Public Information and Education and by the members of our Woman's Auxiliary in coöperation with many volunteers from the allied fields. As a member of the medical profession you must give serious thought to how you can contribute your time and effort toward improving the health care in your community. This is not a temporary project of a Society committee, but a responsibility of the medical profession. Let all of us do our share in "Teaming Up for Better Health."

Frank S. Pellegrini

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- Gradual onset of action avoids the danger[4] of sudden electrolyte and fluid depletion.
- May be effective as the sole diuretic or may be combined with a thiazide, furosemide[5] or ethacrynic acid[6].

Indications—Essential hypertension; edema or ascites of congestive heart failure, cirrhosis of the liver and the nephrotic syndrome; idiopathic edema. Some patients with malignant effusions may benefit from Aldactone, particularly when given with a thiazide diuretic.

Contraindications—Acute renal insufficiency, rapidly progressing impairment of renal function, anuria and hyperkalemia.

Warnings—Potassium supplementation may cause hyperkalemia and is not indicated unless a glucocorticoid is also given. Discontinue potassium supplementation if hyperkalemia develops.

Usage of any drug in women of childbearing ge requires that the potential benefits of the drug be weighed against its possible hazards o the mother and fetus.

Precautions—Patients should be checked arefully since electrolyte imbalance may occur. lthough usually insignificant, hyperkalemia ay be serious when renal impairment exists; eaths have occurred. Hyponatremia, manifested by dryness of the mouth, thirst, lethargy nd drowsiness, together with a low serum odium may be caused or aggravated, espeally when Aldactone is combined with other uretics. Elevation of BUN may occur, espeally when pretreatment hyperazotemia exists. ild acidosis may occur. Reduce the dosage other antihypertensive drugs, particularly e ganglionic blocking agents, by at least 50 r cent when adding Aldactone since it may potentiate their action.

Adverse Reactions—Drowsiness, lethargy, headache, diarrhea and other gastrointestinal symptoms, maculopapular or erythematous cutaneous eruptions, urticaria, mental confusion, drug fever, ataxia, gynecomastia, mild androgenic effects, including hirsutism, irregular menses and deepening voice. Adverse reactions are infrequent and usually reversible.

Dosage and Administration—For *essential hypertension* in *adults* the daily dosage is 50 to 100 mg. in divided doses. Aldactone may be combined with a thiazide diuretic if necessary. Continue treatment for two weeks or longer since an adequate response may not occur sooner. Adjust subsequent dosage according to response of patient.

For *edema, ascites* or *effusions* in *adults* initial daily dosage is 100 mg. in divided doses. Continue medication for at least five days to determine diuretic response; add a thiazide or organic mercurial if adequate diuretic response has not occurred. Aldactone dosage should not be changed when other therapy is added. A daily dosage of Aldactone considerably greater than 75 mg. may be given if necessary.

A glucocorticoid, such as 15 to 20 mg. of prednisone daily, may be desirable for patients with extremely resistant edema which does not respond adequately to Aldactone and a conventional diuretic. Observe the usual precautions applicable to glucocorticoid therapy; supplemental potassium will usually be necessary. Such patients frequently have an associated hyponatremia—restriction of fluid intake to 1 liter per day or administration of mannitol or urea may be necessary (these measures are contraindicated in patients with uremia or severely impaired renal function). Mannitol is contraindicated in patients with congestive heart failure, and urea is contraindicated with a history or signs of hepatic coma unless the patient is receiving antibiotics orally to "sterilize" the gastrointestinal tract.

Glucocorticoids should probably be given first to patients with nephrosis since Aldactone, although useful for diuresis, will not directly affect the basic pathologic process.

For *children* the daily dosage should provide 1.5 mg. of Aldactone per pound of body weight.

References: **1.** Doll, J. L. C.: Amer. Heart J. 70:572-574 (Oct.) 1965. **2.** Liddle, G. W.: Ann. New York Acad. Sci. 139:466-470 (Nov.) 1966. **3.** Gantt, C. L.: Diuretic Therapy, DM (Disease-A-Month), Chicago, Year Book Medical Publishers, Inc., 1967, pp. 1-31. **4.** Alexander, S.: Geriatrics 23:131-139 (Nov.) 1968. **5.** Stason, W. B., and others: Circulation 34:910-920 (Nov.) 1966. **6.** Lieberman, F. L., and Reynolds, T. B.: Gastroenterology 49:531-538 (Nov.) 1965.

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Dosage and Administration: Adults: Two tablets, orally, four times per day, followed by liberal fluid intake. Older children reduce dosage in proportion to age and weight.

How Supplied: Bottles of 50, 500 and 1,000 tablets.

References: (1) Sand, R.X.: New York St. J. Med. 61:2598-2602, 1961: (2) Renner, M.J., et al.: Hosp. Topics 39:71-73, 1961: (3) Haas, J., and Kay, L.L.: Southwest. Med. 42:30-32, 1961: (4) Marshall, W.: Clin. Med. 7:499-502, 1960: (5) Strauss, B.: Clin. Med. 4:307-310, 1957.

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History of the Medical Society
# of the
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CHAPTER III

Public Health

In 1820, the year after the Medical Society of the District of Columbia was granted a charter, many citizens of Washington were—with good reason—more concerned with sanitation than with public education.

The city's population was then approaching 15,000. Except for householders in a 2-mile stretch on Pennsylvania Avenue who had arranged to have water piped into their dwellings, everyone pumped water from their cisterns or carried it from wells in public squares. Garbage was not infrequently dumped into the streets for roving pigs. Prior to 1820 families had to hire public scavengers to clean their privies which was often carelessly done.

Physicians were not unaware of this situation, but it remained for Dr. Henry Huntt, one of the founders of the Medical Society, described by one historian as "a rather bumptuous young man, defensively proud of Washington," to do something about the situation. He became so distressed about conditions that he volunteered to act as Health Officer without pay. The Common Council and the Board of Aldermen considered the proposal and specified that "a discrete and prudent citizen, being a member of the Medical Society of the District of Columbia be appointed Health Officer of the City of Washington." Dr. Huntt was thereupon chosen.

For reasons not now clear the Council and the Board in 1822 created a Board of Health composed of one physician and one layman from each ward in the city. Included was also a physician attending the Washington Asylum. Dr. Huntt was elected Chairman.

Unfortunately, no enforcement powers were conferred upon the Board which "had little control over the abatement of nuisances."

The Medical Society coöperated with the Board of Health in an effort to stem the spread of smallpox in 1828. In 1832 members of the Medical Society vaccinated the poor without charge.

Far more serious in the same year was Asiatic cholera which took a heavy toll of lives. The Board of Health did what it could, forbidding the importation of fresh fruit and vegetables, abolishing pigsties in the city during the emergency, prohibiting public entertainment, and anulling licenses to sell liquor for 90 days. Physicians prescribed bleeding, doses of calomel, and abstention from stimulants. Three houses were rented as hospitals. The mournful sound of drivers' horns and the call of "bring out the dead" sounded in the streets.

The epidemic was blamed by some on "large numbers of foreign immigrants employed in public works, most of them from Ireland and Germany, because they were not accustomed to our climate, habits, and mode of living." The epidemic finally ran its course.

The Board of Health was frequently at odds with the Medical Society. Members of the Society favored the registration of births only "so far as compatible with professional competence and due regard to the feeling of patients." The Board proposed an ordinance requiring that physicians sign death certificates, whereas previously they had only been required to do so on a voluntary basis. A clergyman and a member of the family were also required to sign. This was opposed by the Medical Society, and the ordinance was rejected.

It seems incredible that in 1860 householders in Washington still dumped garbage and slops in alleys and roads. Pigs still scavenged. Rats and cockroaches infiltrated most buildings, including the White House. Flies swarmed from the stables, and mosquitos bred by the millions in stagnant pools. Faulty drainage exposed neighborhoods to dysentery and typhoid fever. Mortality rates in the city were extremely high—35 per 1,000, half being children under one year of age.

Physicians were helpless to aid in the enforcement of health measures in the face of many independent and sometimes hostile citizens, but a healthier city was in the making, although it would require nearly a decade.

Congress, which had been more or less apathetic to the situation, passed a law in 1871 creating a Board of Health with broad powers, in fact, so broad as to result in a protest by 78 members of the Medical Society. In a petition which they submitted to Congress it was stated that the reason for opposing certain provisions was that they would destroy not only the privacy of the domestic household but the "sacred relations" existing between the physician and his patient and would be a great injustice to the medical profession.

Particular objection was raised to two members of the Board of Health, Dr. T. S. Verdi, a young homeopath "not recognized as a regular practitioner by the American Medical Association," and Dr. T. W. Bliss, a physician who was not at that time in good standing with the Medical Society. Dr. Verdi later became the Health Officer.

The Board of Health replied to the petition, speaking up strongly for Dr. Verdi. There was more or less harmony between the Board and the Medical Society thereafter.

In the years that followed, the Medical Society, in coöperation with the Health Officer and the Board, which was finally abandoned, made important contributions to the improvement of public health. Among them was the much needed improvement in the water supply, control of contagious diseases, eradication of tuberculosis and malaria, the improvement of the production and sale of milk. Washington was one of the first cities in the country to require dairies, following inspection, to have a permit.

Progress in the health of the community was reflected in the vital statistics. However, much improvement was still needed. At this point the history of public health activities in Washington will be picked up at the end of the 1930's, when it was decided that the Medical Society should employ a full-time executive. Much of the detail in the years preceding will be found in the histories of the Medical Society of the District of Columbia by Drs. D. S. Lamb and John B. Nichols.

Much of the progress in public health was now made possible by an adequately staffed health department. Numerous lay voluntary health organizations dedicated to the eradication or control of tuberculosis, heart disease, cancer, poliomyelitis, and diabetes also came into being. To all, the Medical Society either lent its coöperation or was represented in its governing bodies.

One of the most civic-minded leaders in the public health field was Dr. Herbert P. Ramsey. Largely through his efforts the Obstetrical Board was organized. It began functioning in 1937. Its purpose was to review maternal deaths in Washington hospitals in an effort to reduce their number. Represented on the Board were the Medical Society, the Washington Gynecological Society, the D.C. Health Department, and the Children's Bureau. In attendance at all meetings were representatives of all hospitals in the city accepting obstetrical cases. Dr. Ramsey served as Chairman of the Board from its inception until the beginning of World War II when the Board became inactive. It was reactivated in 1950 with Dr. C. K. Fraser as Chairman, a post he still held in 1962. Representatives of the Medico-Chirurgical Society and Howard University College of Medicine had then become members of the Board.

Health Officer Ruhland

From 1935 to 1949 Dr. George C. Ruhland was the Health Officer of the District. He had come to Washington from Syracuse, New York, and had a fine record as a public health administrator both in that city and before that in Milwaukee, Wisconsin.

In appearance Dr. Ruhland was a slender, graying man in his 50's. He carried himself with considerable dignity and on occasion could be inflexible. The burden of his office did not weigh too heavily on his shoulders, although he was sensitive to criticism by physicians.

On the whole he enjoyed a very satisfactory relationship with the medical profession. His tenure was marked by a number of innovations. The Medical Society frequently came to his rescue as, for example, when the passage of the new Communicable Disease Code was before the Congress.

He in turn sought the Medical Society's views on his proposals in regard to nursing homes. In essence the proposed code provided that the "D.C. Health Department will regard any place that houses for monetary consideration three or more persons, not next of kin, under the supervision and care of persons licensed to practice the healing art, a hospital." The Medical Society urged that judgment be used in the enforcement of the proposal, not making it impossible for people of limited means to obtain nursing-home care. The Society also urged further study of nursing homes which it was known were alarmingly inadequate.

Dr. Ruhland often chafed at having to go to the Medical Society for approval of many of his proposals. Sometimes when he forgot to do so he was roundly criticized by the profession. A proud man, he resented being subservient to the Medical Society's will. What some physicians said he forgot was that the success of his program depended to a large extent upon the coöperation of the rank and file of the medical profession. On the other hand, many physicians were inclined to be critical of all public health officials, looking upon them as "empire builders."

In 1938 the Medical Society had a Committee on Public Health and subcommittees on the prevention of deafness, maternal welfare, mental health, sanitation, tuberculosis, veneral disease, and the conservation of sight. Dr. Ruhland had ready access to these bodies. Some of the committees in the years that followed were eliminated. For example, in 1962 the subcommittees of the Committee on Public Health were limited to veneral diseases, child welfare, diseases of the chest, and maternal welfare. The actions of subcommittees required the approval of the Public Health Committee. Several that had previously been subcommittees were to become independent committees. They included mental health (which now had a subcommittee on alcoholism), cancer morbidity review, cancer control, blood, and aging. They reflected medical progress and changing emphasis in the intervening years.

New Health Officer

Dr. Ruhland retired in 1949 at the age of 70. He still looked much younger than his years. The *Health Officer's Digest* stated that under his direction "a unique record of building up three of the finest health departments in the country had been achieved."

Dr. Harry F. Dowling, Chairman of the Medical Society's Public Health Committee, stated in an editorial in the *Medical Annals of the District of Columbia*, "We salute the retiring health officer as a doctor and administrator of demonstrated ability, as a public servant of proven integrity, as a gentleman whose patience and good sense have been taxed through a thousand trials." The latter undoubtedly referred to his frequent encounters with the committees of Congress.

Since Dr. Ruhland's arrival in the District in 1935 the death rate had been reduced by 34 per cent; infant mortality had dropped 59.8 per cent, tuberculosis 47.7 per cent, and pneumonia 94.0 per cent. Dr. Ruhland would have been the first to admit that this record would not have been possible without the Medical Society's coöperation.

The number of Health Department employees had grown from 263 to approximately 2,700 and the budget from $520,000 to over $7,000,000. This often caused the unfriendly doctors to pin the "empire builder" label on Dr. Ruhland. The majority of physicians, however, were appreciative of his accomplishments.

The Executive Director of the Medical Society was appointed one of a committee without vote by District Commissioner Guy Mason to recommend a successor to Dr. Ruhland. The available candidates were investigated, but before a recommendation could be made Commissioner Mason died. Dr. Daniel L. Seckinger, who had been Deputy Health Officer under Dr. Ruhland, was then chosen.

Dr. Seckinger was in some ways an unfortunate choice, both for himself and the community. Educationally he was excellently equipped, but he was deficient as an administrator. A bald, stocky man with a fringe of white hair, he had a pleasant personality. However, it was evident that in his new position he was insecure. He was overly anxious for approval and suspicious that he was being undermined. In a non-administrative position he would have been much happier.

The Medical Society gave him the support he asked for, but somehow the Health Department under his direction lacked the firm hand of Dr. Ruhland. Politics, inside and outside of his department, became more of a factor than before.

In 1949 the Health Officer's title was changed to the Director of Health. Dr. Frederick C. Heath was appointed Associate Medical Director in 1952.

Cancer Control

The first cancer control campaign, sponsored by the Medical Society, was in August, 1939. It was spearheaded by Colonel Eugene R. Whitmore (M.D.) who gave it the enthusiasm needed for the next few years. Its program was largely educational.

The program was later taken over by the D.C. Division of the American Cancer Society. The Medical Society endorsed the new organization's educational, research, and civic projects. It also approved of the financial contributions to support its activities. Among the projects sponsored by the Division were diagnosis and treatment of indigent cancer sufferers and instructive visiting nurses care in terminal cases at the Washington Home for Incurables.

The Health Department established a Cancer Control Registry in 1951 which the Medical Society endorsed. The Registry was under the direction of the Department's Bureau of Cancer Control of which Dr. Charlotte Donlan was the Director. Dr. Donlan presented statistics in the May 1951 issue of the *Medical Annals of the District of Columbia* showing that 2,980 patients had been seen for cancer by Washington physicians during 1948-49. She expressed the hope that cancer would become a reportable disease. At that time reporting of cancer cases was on a voluntary basis.

President Truman, later in the year, signed a law making cancer, i.e., carcinoma, lymphoma (including Hodgkin's disease), leukemia, and all other malignant growths, reportable to the Director of Health of the District of Columbia. Reports would be confidential. The D.C. Commissioner issued regulations governing reporting of malignant growths on April 22, 1952.

Venereal Disease Programs

For many years the Health Department had conducted venereal disease campaigns jointly with the Medical Society. The prevalance of this disease fluctuated but never was sufficiently quiescent to justify relaxation of efforts to combat it, and there was always the unanticipated flare-up. The year 1949 must have been such a period because Dr. S. Ross Taggart, Director of the Bureau of Venereal Diseases of the Health Department, indicated the urgency of the situation when -he wrote in the *Medical Annals of the District of Columbia* for October of that year:

"The Bureau of Venereal Diseases of the D.C. Health Department is sponsoring the biggest all-out drive against venereal diseases, starting October 1, ever conducted in the District.

"Coöperating in the drive are the leading business, labor, professional, civic, fraternal, veterans, religious, and other groups in the community. These organizations have formed a Citizens' Committee, elected officers, appointed subcommittees, and made plans to carry out the objectives of the campaign."

The Campaign promised was, to say the least, unique:

"In addition to the usual mass media, press, radio and the screen, new adaptation will be employed in the campaign. For the first time in history the V.D. story is being told to music. Transcriptions from Columbia University present some of America's leading folk-singers: Merle Travis, Tom Glaser, Red Foley, Norman Brokenshire, and the Dixicares. Spot announcements from the same source featured Admiral Denfield, Jim Parry, Phil Silvers, and others of national prominence. . .

"A film also will be used entitled 'Feeling All Right,' which has won a citation as the best documentary film in this field; it has been shown at the Howard Theater, over WTTG television station, and at neighborhood meetings. 'The Big Fight,' featuring Joe Lewis, has been shown over WTTG and at several local meetings."

In the December issue of the *Medical Annals of the District of Columbia* Dr. Monroe Romansky, Chairman of the Subcommittee on Venereal Diseases, wrote: "The medical profession has never been in such a favorable position to get in a 'knock-out' against syphilis and gonorrhea as it is today. Present repository types of penicillin are by far the most versatile therapeutic agents ever made available for use against these diseases. As it has been aptly put by one venereologist, 'A sniff of the penicillin and the gonococcus drops dead.' "

Of one thing one could be certain. No matter how successful this effort—and it was—there would be other V.D. campaigns in the future just as urgent.

Reorganization Plan for the District of Columbia

The Executive Board of the Medical Society reported to the Society at a meeting held on March 5, 1952 that its Committee on Public Policy had met with Brigadier General Bernard L. Robinson, Engineer Commissioner for the District, and Dr. Daniel L. Seckinger, Director of Health. Presented to the Committee was a proposed reorganization plan for the District. The Committee in turn submitted it to the Executive Board which made its recommendations to the Society.

Subsequently, a Medical Advisory Committee to the Director of Health was appointed. The Committee voted to expand its membership and to conduct a Survey of Medical Care for the Indigent and Related Services in the District. Mr. Wm. E. Leahy, a prominent Washington attorney, was chosen Chairman of the Executive Committee of the General Survey Committee. Dr. Wallace M. Yater, then President of the Medical Society, was appointed Chairman of the Technical Committee on Medical Care. He was also a member of the Executive Committee and its Vice Chairman.

The Survey was made possible by the generous loan of 15 professional medical surveyors by the Public Health Service, headed by Dr. E. E. Thompson. When the Survey had been concluded Dr. Yater reported to the Medical Society at its Annual Business Meeting, held on May 6, 1953, that it was the most complete survey of its kind ever conducted in the District. Several members of the Medical Society, he said, had served on Survey committees.

The Executive Committee, it was planned, would continue in existence to aid in the implementation of the recommendations. Following approval of the General Survey Committee, all organizations coöperating in the study would be asked to endorse the findings and recommendations. Following endorsement, the Committee would have its members appear before the District Commissioners. If called upon, Committee members would testify before the District Senate and House committees.

Dr. Yater said the following were the most urgent proposals:

"1. That the Director of Health and the volunteer hospitals make a sincere effort to collaborate in the care of the medically indigent and that insofar as possible all of the medical needs of the indigent patients be met in voluntary hospitals.

"2. That the Health Section of the United Community Services be accepted as the Community Planning Agency for medical care in the District of Columbia, providing this body be reorganized along the lines set forth in the Survey Report.

"3. That a Board of Health be established by law and that the functions of the Board shall be policy-making, promulgation of rules and regulations, holding of hearings, issuing of licenses and permits, approval of plans, programs, budgets and reports, and appointment of the Director of Public Health.

"4. That the present administrative pattern of the Health Department be reorganized to provide better integration of medical services. The principle of the pyramidal pattern is recommended in this reorganization in which not more than five department chiefs report directly to the Director of Public Health."

The Society gave its approval to the proposals.

Dr. Yater stated that a series of articles embodying the recommendations entitled "Mile Posts to Health" would appear monthly in the *Medical Annals of the District of Columbia* beginning with the June 1952 issue.

It soon became known that Dr. Seckinger, Director of Health, was violently opposed to a Board of Health with policy-making powers. He and his supporters did everything they could, politically and otherwise, to oppose the adoption of this proposal. It was soon apparent that Mr. Leahy had been won over to their cause. Although he was begged to do so by members of the Executive Committee, he refused to call a meeting. There was nothing to be done in the circumstances. Apparently Mr. Leahy thought if he did so, and the action on the Survey was favorable, he would lose some of his popularity.

Members of the Executive Committee, except for Mr. Leahy, requested to be heard by the District Commissioners. Their request was granted, and on July 25, 1953 Dr. William P. Herbst, speaking for the Executive Committee, of which he was a member, urged the establishment of a Board of Health and offered the reasons therefor. Dr. Seckinger, who was present, was in a high state of indignation. He set forth his reasons for opposition to the Board, with the result that the Commissioners supported him. Not only that, Mr. Leahy still refused to call a meeting of the Executive Committee.

A considerable sum of money, time, and effort had gone into this project. Mr. Leahy's action does no credit to his memory. He could have, if he had had a mind to do so, salvaged some or most of the 165 recommendations contained in the study to improve the functioning of the Health Department. As for Dr. Seckinger, he lost more than he gained by his intemperate attitude, which foreshadowed his departure.

Metropolitan Area Council on Rehabilitation

At its meeting on September 21, 1955 the Medical Society created a Committee on Vocational Rehabilitation, later designated the Council on Rehabilitation for the Washington Metropolitan Area. The Committee was re-named the Council with the view of including representatives of other organizations, especially medical groups in the adjacent counties.

The Council authorized the development of a pilot program to the "study of existing rehabilitation facilities in the Washington Metropolitan Area, assessment of the present and the future." Funds for this project were made available by the office of Vocational Rehabilitation of the Department of Health, Education, and Welfare.

The first meeting of the Council was held on July 12, 1956. Dr. Preston A. McLendon was the chairman. Miss Josephine J. Albrecht was employed as the Council's Executive Secretary. She had held a similar position with the Health Section of the United Community Services.

It was stated in the *Medical Annals of the District of Columbia* that the undertaking "represented the first attempt of organized medicine to spearhead a movement designed to integrate allied disciplines for more effective service to an important segment of the population, the disabled residents of the Washington Metropolitan Area."

The first step was to take an inventory of the rehabilitation programs and facilities in the area, to determine gaps or shortcomings which might exist, and to prepare findings, conclusions and recommendations pointing toward improved services to the handicapped. It was reported that there were 140 agencies or facilities providing some sort of service to the handicapped. There were other objectives which were to prove laborious and time-consuming. It soon became evident that additional funds would be necessary. A continuation grant was sought and authorized.

In August, 1958 Dr. James W. Watts, then President of the Medical Society, urged members to complete a survey form sent them by the Council. "If we are to improve services to the handicapped of our community," he said, "it is essential that each physician contribute to the effort."

In its report to the Medical Society at its Annual Meeting on November 22, 1959 the Executive Board stated:

"The study undertaken by the Society's Council on Rehabilitation in 1956 will have been completed on September 30, 1959. The original expiration date of the project, which was underwritten by the Office of Vocational Rehabilitation, Department of Health, Education, and Welfare was June 30, 1959. Upon request of the Council the project was extended by OVR for an additional three months so that the study could be completed. . .

"At a meeting of the Executive Board on March 23, 1959 the Council submitted a proposal that the needs already demonstrated by the study be implemented and that a pilot program be undertaken under the general sponsorship of the Society in coöperation with the medical societies in the Metropolitan Area. The Council stated that the program would 'provide a reservoir of professional talent to which health as well as medical agencies could turn for review and explanation, advice and counsel on the medical aspects of their programs and serve both as a forum and a central source of health information in the areas of the handicapped, the aging and the chronically ill.' "

An application for funds to make the pilot program possible was made to the Eugene and Agnes Myer Foundation. However, the Foundation did not approve the request.

The availability of copies of the study—the first of its kind—was announced at a meeting of the Executive Board, January 25, 1960. It was reported that there had already been demands for copies from various parts of the country.

Although funds for the pilot program could not be obtained, the completion of the three-year study was considered no small achievement.

Dr. Seckinger Resigns – Dr. Finucane Takes Over

On January 8, 1956 Dr. Seckinger, Director of Health, notified the Board of Commissioners that he wished to resign as of January 31, 1957 for reasons of health. It was known to a number of people that he had not been happy in his position.

He was succeeded by Dr. Daniel L. Finucane, then Superintendent of Glenn Dale Sanatorium. Dr. Finucane accepted the appointment reluctantly because he had "no formal academic training in public health." But the District Commissioners were insistent.

Dr. Finucane was a large, gray-haired, quiet-spoken man who was well-liked by the medical profession. He had the wholehearted confidence and coöperation of Medical Society officials because they liked his forthrightness. As did his predecessors, Dr. Finucane had his difficulties, mostly, it is said, in his relations with Congress, but these were not too serious.

All in all, Dr. Finucane was highly regarded for his equanimity and as a capable administrator.

Asian Flu Epidemic

In the fall of 1957 there was grave concern about the possibility of a virulent epidemic of Asian Flu that might paralyze whole cities, and possibly the nation. However, Dr. Clifton R. Gruver, then Chairman of the Medical Society's Public Health Committee, pointed out that the disease had been isolated and a vaccine had been produced which appeared to be effective. He said the vaccine would be released in an equitable fashion throughout the country. Some dangers in its use were indicated, an example being allergy to egg.

Dr. Finucane, Director of Health, was made Chairman of the hastily organized Joint Committee on Asian Flu and Dr. Gruver Co-chairman. Represented in the membership of the committee were the Medical Society, the Medico-Chirurgical Society, the D.C. Pharmaceutical Association, the Hospital Council of the National Capital Area, and the Washington Board of Trade.

The Committee met frequently and devoted many hours to the development of a plan to meet the expected threat. It was agreed that all agencies for the care of the sick should be asked to participate. Experts from the Public Health Service lent their assistance.

Dr. Gruver urged physicians to do all in their power to allay anxieties of their patients.

The shortage of vaccine was acute, and criticism followed. The Public Health Service stated that priorities should be established by the local health officials. It was announced that each physician would be allowed 10 c.c. of vaccine when available. However, there were delays, and it became apparent that there were shortcomings in a voluntary system of distribution.

In January, 1958 it seemed that the sudden Asian Flu epidemic had abated and that there would be no recurrence. However, it was agreed that there should be a stand-by program. The Medical Society's Committee on Public Health had canvassed members for volunteers to vaccinate the indigent. The response was most satisfactory, and the Committee was informed that their services would be available in any emergency.

The Joint Committee remained on call, but need for its services never became urgent.

Nursing Home Situation

Because of the deplorable situation said to exist in many nursing homes in the District of Columbia, the Public Health Committee authorized, following two years of investigation, a survey of the Medical Society's membership to determine their experiences with the care patients received in these homes.

Responses were received from 231 members, or roughly 10 per cent of the Medical Society membership. Comments by many indicated that conditions in some homes were appalling. Other complaints were that the homes were poorly managed, had inadequate facilities, gloomy surroundings, and frequently poor sanitation. Economic factors such as the cost of nursing, inadequate personnel, and safety precautions were cited. It was also pointed out that the cost of extended care in good nursing homes was beyond the reach of most middle- and lower-income families. A few nursing homes were commended. The need, the survey indicated, for patients with chronic diseases was the establishment of convalescent homes. Nursing homes in Maryland were rated higher than those located in the District of Columbia.

Dr. Gruver in his report indicated that active steps should be taken to encourage and help the operators improve the type of care they provided. He said this could be done only through the combined efforts of the Medical Society, the Health Department, and the operators. The survey had a salutary effect. In the months that followed there was noticeable improvement in the nursing home situation.

White House Conference on Aging

In anticipation of the White House Conference on Aging, held in Washington, January 9–12, 1961, the Board of Commissioners appointed a Steering Committee on April 23, 1959. Dr. Jack Kleh was designated Chairman. He was also Chairman of the Medical Society's Committee on Aging.

The Steering Committee was given the responsibility of forming a Council on Aging by bringing together those interested in problems of the aging and best qualified to develop a program for them. As part of the preparation for the White House Conference, the Council was required to submit a "state plan" to the special staff on aging of the Department of Health, Education and Welfare.

Aside from physicians on the Steering Committee, the following chairmen of special committees were appointed:

Committee on Health: Dr. Andrew G. Prandoni
Committee on Economics: Theodore Wiprud, Executive Director of the Medical Society of D.C.
Committee on Rehabilitation: Dr. Josephine Buchanan
Committee on Education: Mr. Francis G. A. Gregory
Committee on Housing: Miss Doris Wilkins
Committee on Recreation: Miss Sybil Baker.

Twelve delegates to the White House Conference were allocated to the District of Columbia. They included Dr. Kleh, Dr. Prandoni, Dr. Otis Farley, Administrator of St. Elizabeths Hospital, Dr. Joseph L. Johnson, member of the Steering Committee, Dr. Daniel L. Finucane, and Mr. Wiprud.

On January 9, 1961 some 2,800 delegates, staff, and resource people met to consider what 20 years' extension of life meant to some 16 million elderly people in terms of unmet needs and unutilized services. Discussions and recommendations received Nation-wide publicity. Many of them related to the financial needs of the aging. Unfortunately, this was played up in the press to the exclusion of other issues. It was charged that the medical delegates had "captured" the Conference for the purpose of opposing the Social Security method of financing the needs of elderly citizens. One delegate stated regretfully, "The current political controversy over providing medical care for the aged has encouraged the press to focus its attention on this phase of the White House Conference and to neglect reporting on other important aspects of the Conference's work. Hundreds of people are devoting their time to discussing many other problems which this Nation faces in attempting to provide a secure and fruitful life for older citizens."

In extravagant language a *Washington Post* writer referred to the expected "medically rigged Donnybrook." Attention was called to the fact that in the District of Columbia one-half of the delegates to the White House Conference represented the D.C. Medical Society. However, his 'fire' was concentrated on the delegates representing the AMA. It was, in effect, a revival of the old controversy over socialized medicine.

No newspaper reporter approached the Executive Director of the Medical Society, who was Chairman of the Committee on Economics, to learn what the findings and recommendations of his Committee were. If they had, they would have learned that a Committee representing diverse interests took no action in regard to how medical care should be financed. Certainly it did not register opposition to the Social Security System. However, it did concern itself with financial problems of the aging, i.e., financial status, medical care costs, and employment.

Representatives of the AMA were vocal in their opposition to the Social Security method of financing medical care for the aging. However, despite the hysteria of some reporters, it soon became apparent that organized medicine had not "captured" the Conference. Delegates to the Section of Financing Medical Care voted 170 to 99 for the Social Security method.

Eventually Social Security became responsible for what is known now as Medicare, a health insurance program for the aging—but more about that in a later chapter.

It had been thought before the controversy arose that preventive health measures for the aging would be given paramount attention, but that was not to be. However, at least the Conference served to focus the attention of the country on some of the health problems of the aging.

Other Public Health Projects

It is not the intention to leave the impression that the public health projects which have been described in more or less detail could be said to be entirely successful, but they did have significance for the future. There were, of course, other projects to which much time had been devoted by committees which for one reason or another must be counted in some degree as failures. Among them were:

Periodic health examination program. This program did not stimulate the interest expected among the Medical Society membership. However, much time was devoted to it. Forms were prepared for physicians to use. Many of these were sold to physicians, but overall there was not enthusiasm for this type of preventive medicine. The demands made on the Medical Society at the beginning of World War II sealed the fate of the program.

Health Council of the Washington Metropolitan Area. This organization gave great promise under the able leadership of Dr. Herbert P. Ramsey. However, following his departure as Chairman it soon passed into oblivion.

Hall of Health. There was much enthusiasm for the establishment of a permanent health exhibit, but funds for it could not be secured although business leaders in Washington joined with the committee of the Medical Society in endeavoring to make this proposal successful.

District Health Department and the Medical Society

There was the closest coöperation between the District of Columbia Health Department and the Medical Society in the 1940's and 1950's. They had their differences, but they were minor compared to their joint efforts year after year in combating contagious and infectious diseases such as tuberculosis, venereal diseases, poliomyelitis, diptheria, and other diseases that threatened the public health. It was a record of which both may be proud.

Editorials

Children's Hospital Planning a Second Century of Service

CHILDREN'S HOSPITAL of the District of Columbia opened its Centennial Year observances on April 10, 1970 with a Centennial Postgraduate Education Course for pediatricians given in conjunction with the George Washington University School of Medicine. The course was held, April 10 and 11, at the Washington Hilton Hotel just prior to the spring meeting of the American Academy of Pediatrics. On Sunday, April 12 a Special Seminar, co-sponsored by the AAP, Children's Hospital, and the Baltimore-District of Columbia Psychoanalytic Institute, was conducted. These seminars were the first of a series of professional events to mark 1970 as the Centennial Year of Children's.

Children's Hospital was born in the mind of Dr. S. C. Busey, physician-in-charge of the Department of Diseases of Children at the Columbia Hospital for Women, which was founded only 4 years earlier. Washington was, at the time, in a difficult period of transition following the Civil War. Large numbers of women had come to the city during and after the War in search of relatives or friends or for information from the War Department. Many of them and their children were "without means," and when they became ill were thrown upon the charity of the residents of Washington.

Dr. Busey enlisted Dr. F. A. Ashford, Dr. William Drinkard, and Dr. W. W. Johnson in his plan. At a public meeting in November 1870 a Board of Directors and a Board of Lady Visitors were formed. They drew up the by-laws and constitution, and on December 5, 1870 Children's Hospital of the District of Columbia was incorporated; its purpose: "the gratuitous medical and surgical treatment of indigent children without distinction of race, sex, or creed: provided, however, that the Board of Directors may provide for the admission of sick children whose parents or guardians may be willing to defray the expense thereof."

It is interesting that this proviso was made for "paying" patients from the beginning. However, Hospital records show no income from paying patients until 40 years later.

The Hospital's first home was in a rented house on the northeast corner of 13th and F Streets, N.W. Opening its doors to receive its first patient on February 11, 1871, it offered care to children between 18 months and 12 years of age. Furnished by the Lady Visitors, it had 12 beds and a dispensary. The entire staff was 1 matron; Lady Visitors made daily visits to help care for children and to manage the Hospital. The Attending Staff were the 4 doctors who conceived the Hospital.

During the first year 94 patients were admitted, 22 operations were performed, 99 patients were treated in the dispensary, and 125 patients were vaccinated. Funds for the first year's expenses, $5,138.50, were raised by the Board and the Lady Visitors.

Every contribution in the early years was invaluable. The Hospital's first Annual Report records that a Mrs. Sullivan donated 22 loaves of bread; Mrs. Lee, grapes; and Mrs. Ogden, a half-dozen teaspoons.

In 1872 the Hospital moved into more spacious quarters at 805 E Street, N.W., where the bed capacity increased to 35; the staff grew to include a resident doctor, a nurse, and 3 aides.

But the demand for services grew, and another move was required. A newspaper account of October 1, 1879, recorded the event thus:

> "The Children's Hospital...will be transferred from its old quarters in a few days to the new building, which is situated on a square of ground bounded by W, V, Twelfth and Thirteenth Streets. This lot contains 98,268 square feet. It possesses peculiar hygienic advantages for hospital purposes, being elevated, thoroughly dry, entirely free from marshy surroundings, and sufficiently secluded from noise and bustle, with a supply of water and gas on each line of the square.
>
> "The buildings...are built of plain red brick, and are of a simple and imposing architecture.... The Hospital has been located about 45 feet south of the building line on W Street, making thereby ample space for a handsome park and approach to it."

The newspaper account, after summarizing the statistics and financial records of the Hospital's first 9 years, concluded that "The Hospital is now on a sure footing, and will, no doubt, be a permanent institution."

The new Hospital had a bed capacity of 67. The daily average cost per patient was 44 cents.

A few years earlier the Board had decided that the Hospital was to be a permanent institution and had amended the Certificate of Incorporation in 1884 – incorporating for a period of 1,000 years.

The By-laws contained these objectives: (1) the medical and surgical treatment of sick children, (2) instruction in the diseases of children, and (3) instruction of young women in the duties of nursing.

By 1887 Children's had become a teaching hospital, with medical students from George Washington and Georgetown Universities assigned for training on the wards. (These arrangements took the form of written articles of affiliation in 1961. Howard University joined the group in 1967.)

A school for nurses was opened in 1888, and 6 young women began to receive instruction which would prepare them to "take charge of hospital wards, or to nurse patients in private families or strangers in hotels." Because the Hospital was a specialty hospital for children, the school was not authorized to give diplomas to its graduates. In 1892 arrangements with Columbia Hospital for Women made the exchange of students possible, with training in both institutions over a 2-year period, thus making it possible to grant diplomas. The first diplomas were granted in 1893, with 2 nurses from Children's represented. In 1914 Children's established its own School of Nursing, with a 3 year course, in affiliation with Garfield and Emergency Hospitals. Finally, the School of Nursing was discontinued in 1934, with only a postgraduate nursing program and an affiliating program continuing.

From the beginning the Board of Lady Visitors has stimulated nursing programs in the Hospital, as they do to this day. And, from the beginning, they have played a leading role in the Hospital's fund-raising campaigns. Other volunteer groups have at varying times brought personal effort, warmth and financial support; these include prominently the St. Mary's Guild and the Junior League.

Following the construction of the Hospital on the present site in 1879, expansion has been continuous. The west wing was built in 1890; the east and west buildings were erected in 1910. When the West Annex was built in 1945 the capacity of the Hospital reached 225. The building first occupied by patients in 1879 was declared unsafe for Hospital use in 1946 and was torn down, making room for the Main Building which opened December 21, 1952.

The organizers of Children's owed a great debt for guidance and planning to the women of the Washington Orphan Asylum, which had been in existence since 1815. Founded by Marcia Burnes Van Ness and Dolly Madison, the Washington Orphan Asylum lives on today as Hillcrest Children's Center. Hillcrest began to consider physically moving to a site near Children's, and in December 1966 the building on W Street was completed; the Department of Psychiatry of Children's moved into space provided there.

The Child Health Center traces its history to a milk station operated from the Hospital's dispensary. Its success led to the opening of an Infant Welfare Station at the Hospital by the Washington Diet Kitchen Association in 1914. After 12 years it became known as the Children's Hospital Welfare Clinic. Since its first establishment the emphasis has been on keeping the well child well. It was one of 8 clinics in the city operated by the Child Welfare Society until 1925 when the other 7 were transferred to the District of Columbia Government. In 1950 the Child Welfare Clinic was officially "adopted" by the Hospital and became an integral part of its program. Renamed the Child Health Center in 1965, its Board remains separately constituted, reporting to the Board of Children's Hospital.

In 1953 a Hearing Clinic was opened, enabling the Hospital for the first time to offer audiometric testing, follow-up, and therapy in speech and language. The Hearing and Speech Department incorporated in 1959, electing its own Board and affiliating with the Hospital. In 1962 the Children's Hearing and Speech Center dedicated its own Aphasia School on 11th Street.

The Research Foundation of Children's Hospital was founded in 1947 as a separate affiliated entity with its own articles of incorporation. An important addition to the programs of the Research Foundation was the opening in 1968 of the Clinical Research Center, financed by a grant from the National Institutes of Health.

As Children's Hospital begins its second century of service to children, the Washington medical community can look back on a record of purposeful growth of an institution with several unique characteristics even beyond its child-orientation. Founded initally as a care facility for indigent children, it has become a vital community and national resource for research in children's health problems and the education of medical and other professional workers in the field of child health; but all the while it has maintained its dedication to service for children.

Since its founding Children's has grown remarkably from 94 hospital patients in the first year to 12,000 per year today; from 99 dispensary patients in the first year to nearly 100,000 ambulatory patients per year treated in more than 30 general and specialized service clinics; from 12 beds in a rented house to a complex of institutions; from a handful of assigned George Washington and Georgetown students in 1887 to 248 Georgetown, Howard, and George Washington University medical students in 1970; from a school of nursing for 6 in 1888 to a collegiate level child health training center for 198 nursing students in 1969; from random pediatric preceptorships in early years to 88 interns, residents and fellows in various aspects of child health in 1970. More than 70 per cent of the approximately 150 practicing pediatricians in the metropolitan Washington area received some part of their pediatric training at Children's Hospital.

Today 72 research or research training projects account for an annual research budget of $2,600,000. In 1969 34 per cent of pediatric inpatient days for metropolitan Washington and 48 per cent for the District of Columbia were provided at Children's Hospital. There is now a Medical and Professional Staff of 851, including 301 Active Staff and 84 full-time physicians. The last listed figure has resulted from the carefully planned, gradual addition to the staff of physicians with academic and research interests, based on the belief that "progress in medicine through research and education is essential to modern good medical care which is the prime objective of the hospital." The full time staff has been recruited in the belief that progressive practitioners will welcome more academic workers so that together they can make this the best possible place for sick children, and that continued participation of voluntary medical staff is essential if the full fruit of such a center is to be available to all children of the community. At Children's there is an absolute will to have this combined system work. CHMC believes that the best possible patient care, its primary objective, can be achieved by blending the interests and active participation of full time and voluntary physicians, including courtesy staff, who use its facilities and join in working toward meeting its commitments.

Another of the unique features of Children's Hospital is its objective of providing first line and emergency service to children of inner city families despite their inability to pay, at the same time it continues to provide general hospital facilities for pediatric patients of privately practicing physicians and while it is developing some of the most specialized care and research programs for children in the world. It is rare among American hospitals to be this much "all things to all people." Rather it has been the tendency for a charity hospital to be a city hospital for the poor, a university hospital to be an ivory tower of learning with restricted intake of patients, and a community hospital to accept only private patients.

Children's "open door" policy, based in its original charter, and its effort to combine care, teaching and research programs and the care of the poor and well-to-do in one setting, has been the source of serious-problems for the hospital, mainly financial, and on the other hand has been its main bulwark. The real central focus has been the child and his health needs and somehow over the years the institution has continued to grow and develop and the community has continued to support it. The result is that metropolitan Washington has at its center in fact and in deed a children's medical center, national in scope by virtue of its training and research programs but dedicated to major service to children of all of metropolitan Washington. The national scope has led to revising the name to Children's Hospital National Medical Center.

The growth recounted above, the antiquity of plans resulting from a century of spatial gerrymandering have also led to plans for an entirely new facility to be located adjacent to the Washington Hospital Center and Veterans Administration Hospital, 1 1/4 miles from the present facility. Child health needs and specialized care have been the prime determinants in planning for the new institution. The programs have essentially been a reaffirmation of commitments of the past decade intended to represent progress along a continuum.

ROBERT H. PARROTT, M.D.
Director, Children's Hospital

HOPE ISHERWOOD
Assistant Administrator,

JAMES STROKER
Director, Public Relations

Sex*

The role of the physician changes from time to time and is dependent upon many variables. We are in a most unique position, for although our job is to relieve suffering and stave off death, we can at best only temporize, since all of our patients are going to die someday of something. Our greatest accomplishments have been in the field of prevention, of keeping a disease, a disability, or a dysfunction from occurring in the first place. It seems odd, then, that we, the preventers, the healers, would do so little about a preventable phenomenon which kills about 60,000 men, women, and children a year and injures about 4.5 million.

What then can you and I do about applying good scientific methods to accident prevention? Some of the suggestions we can follow to help prevent accidents ourselves include always, and in all ways, driving defensively, maintaining our cars in the best possible shape, and insisting on owning all optional safety devices, including the proper tires at the proper inflation for your car. Limit your driving when you are tired, emotionally upset, or drinking. Adjust your driving and speed to current conditions. Don't rush, keep your temper, and, personally, in your community, support better law enforcement, highway improvement, driver education in the schools, and improved driver licensing. Be firm about a patient's medical disability which should keep him or her from driving a car.

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*Reprinted by permission from the Journal of the Kentucky Medical Association, September 26, 1967.

Now how can we help prevent injury in the case of the so-called "second collision," that is, the passenger colliding with the inside of the car? First and foremost, use the seat belt and shoulder harness. Insist upon buying that car and driving that car with the greatest number of safety features, such as padded dash, collapsible steering wheel, and head supports. Accidents are preventable. Unfortunately, we do not seem to be doing too much about seeing to it that they do not take place.

Modern Medicine published a series of articles in 1967 about "The Physicians' Role in Highway Safety" and the Travelers Insurance companies have sent out a booklet called "Was It Sudden?" They both point out ways we can help to reduce the accident rate with its concomitant pain and anguish. They suggest that simply to blame the car, the driver, alcohol, poor roads, or any one single cause is far from a scientific approach. The causes of accidents are many, and they work in a "system" or by chain reaction to cause a tragic or happy ending to a driving experience. There is a car in more or less good condition; there is you, tired, awake, worried or relaxed, on a road well-lighted or dark, wet or dry; and then add or take away any one of another thousand factors. Always remember, the higher the speed, the greater the severity of the accident.

There are misconceptions in the minds of some people which we must help eliminate. For example, some have suggested that a seat belt would prove fatal in case of fire or submerging. The facts are that the chances of survival are greatly increased with the use of the seat belt because the passenger is protected from the second collision and is, therefore, much more likely to be conscious and able to escape. In every discussion of safety there is usually one person who knows of someone who was thrown out of a car and suffered only minimal injuries. For every one of those we can show you 10 whose lives were saved by being belted in. Feeble excuses cannot obscure the obvious fact that you and your family can be killed or maimed in your own car today. If you carry insurance on your car for fear it might be damaged, take out some safety insurance with yourself for fear you and yours might be damaged. There is a shortage of doctors. Please don't be afraid to be afraid.

Oh, yes, if you have wondered why this editorial was entitled "Sex," be honest, now—would you have read it at all if it had been called "Automotive Safety?"

WILLIAM K. KELLER, M.D.
Chairman, KMA Committee on Highway Safety

Better Health Through Community Activity

Doctors sometimes feel the real physician story has not been told—That the public has unknowingly portrayed the medical profession in a way that is somehow untrue and in all probability unfair. It may be likely that if people were better informed they would be more considerate of the practitioners of the healing arts when social and legislative activities are underway.

Community Health Week provides an occasion for each of us to examine our activities within the community and to evaluate whether the present efforts are commensurate with the need. There are an infinite number of ways in which the physician can establish a dialog with his community beginning with the next-door neighbor, PTA, church work, and extending into state and national politics. By supplying the sufficient time and energy necessary, physicians are capable of exerting a positive and beneficial influence.

It is important to recognize that, individually, physicians are held in high esteem in the community. However, when physicians are recognized collectively, as in societies or associations, this influence does not increase in proportion to numbers and may even decrease. Therefore, no substitute exists for the individual physician's activities in affairs of the community.

Community Health Week for 1970 will include: (1) multiphasic screening at the Medical Society, (2) medical visiting teams of a physician, nurse and medical technician presenting career conferences at area high schools, and (3) concentrated efforts through local T.V. and radio to disseminate information regarding activities of physicians within the community. The committee members responsible for these activities are Dr. Warren D. Brill, Dr. Donald I. Haut, Dr. Peter Horvath, Dr. Lewis H. Kurtz, and Dr. Richard L. Welton.

Let us, the providers of medical care, take Community Health Week in its broadest sense, and work together for the betterment of all.

JAMES R. SNYDER, M.D.
Chairman, Community Health Week

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Oral Examination Questionnaire for Dentists*

Realizing that deaths resulting from oral cancer within the District of Columbia are almost double the national average, the Oral Cancer Site Committee of the American Cancer Society's District of Columbia Division recently conducted an unprecedented and intensive survey-questionnaire among all members of the D.C. Dental Society.

The purpose of the survey was to help plan future programs, evaluate interest, and emphasize the importance of oral cancer recognition.

The questions were formulated by members of the Committee. There may be criticism of some of the queries and the wording. However, the response speaks for itself.

The fact that nearly 200 questionnaires were completed and returned is a good return for a mail survey, particularly in this case because no return stamped envelopes were provided by the American Cancer Society.

The results were tabulated by the 1970 Oral Site Committee and the material was submitted to 5 leading oral pathologists throughout the country for their opinions. The comments included here comprise a digest of these along with additions by members of the Committee. As a follow-up the Committee will distribute an oral examination check list to dentists in the Washington area.

1. Do you routinely perform a complete extra-oral examination?
   Yes: 103 No: 89

Comment: An extra-oral examination should include inspection for facial lesions, color changes, asymmetry, etc. Basal-cell carcinoma, for example, occurs on the face, predominantly in fair-skinned individuals, principally on the middle and upper thirds. They occur chiefly in the third and fourth decades. Men are affected more frequently than women. The patient usually complains of a sore which does not heal. Unless adequately treated these malignancies can locally invade, cause extensive destruction, and even death. The cheek, side of the nose, eyelid, upper lip, and the area just anterior to the tragus of the ear are favorite sites. Squamous-cell carcinoma usually is found on the lips and adjacent skin.

2. Do you routinely perform a complete intra-oral examination?
   Yes: 171 No: 24

Comment: It is inconceivable that anyone practicing dentistry could state that he doesn't examine the oral structures completely.

Intra-oral carcinoma presents a problem in recognition. It is impossible to describe a typical lesion in even half the reported cases. It may be an ulcer, white patch, enlargement, fissure, thickening, or a red velvety growth. It is usually painless in the early stages, but pain is a feature when it becomes secondarily infected. In general, about half the primaries are on the tongue, followed by the floor of the mouth, alveolar mucosa, palate, and the buccal mucosa.

3. Do you routinely examine the patient's tongue?
   Yes: 176 No: 19

Comment: Since about half the primary lesions occur on the tongue, examination is essential. The majority of these tongue lesions are on the lateral borders and ventral surface. (Evaluation is impossible unless the patient extends the tongue.)

4. Do you routinely examine the patient's lips?
   Yes: 176 No: 19

Comment: The lips are the entrance to the oral cavity. Basal-cell carcinoma occurs near the lips and squamous-cell carcinoma on and about the lips. All women patients should be asked to remove lipstick for a comprehensive evaluation.

5. Do you routinely palpate the cervicofacial lymph nodes?
   Yes: 62 No: 130

Comment: Squamous-cell carcinoma usually metastasizes via the lymphatics. It may be possible to discover metastatic disease before the primary is suspected. In general, infection produces node enlargement while malignancies produce flinty hard, painless, bound-down nodes. Failure to find nodes after observing oral lesions does not rule out cancer.

6. Do you take a general medical history on all patients?
   Yes: 119 No: 76

Comment: Recent medical advances have helped prolong life. Many patients are "normal" only because they are on medication. Chronically diseased patients with diabetes may be very blasé about their treatment. Ninety-five per cent of all patients consider themselves in good health.

By virtue of his training the dentist is in an excellent position to detect asymptomatic changes. He may contribute greatly by interpreting the medical history.

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* A confidential questionnaire with a covering letter by Paul H. J. Krogh, D.D.S., Chairman of the Oral Site Committee, was mailed to all members of the D. C. Dental Society (580) on November 5, 1968, with returns requested by November 15, 1968; 195 questionnaires were completed and returned.

7. If a patient is being treated for chronic systemic disease, do you contact the patient's physician before instituting dental treatment?
Yes: 164 No: 23

Comment: See comment for Question 6.

8. Should the observation period for nonhealing oral lesions be about 3–4 weeks?
Yes: 90 No: 96

Comment: There appears to be a difference of opinion about this question. Authorities disagree and are indefinite as to time. If there is no obvious cause, such as a jagged tooth, ill-fitting denture, broken clasp, history of trauma, etc., and there seems to be no improvement within a week, definitive treatment should be instituted.

9. Have you performed or referred any patients for biopsy in the last 12 months?
Yes: 143 No: 52

Comment: This is admirable indeed. The very fact that this number of dentists had enough suspicion would probably indicate that this was above the national average.

10. Do you refer patients to oral surgeons for biopsies?
Yes: 145 No: 39

Comment: Oral surgeons are more knowledgeable when evaluating early cancer lesions. Physicians do not routinely see oral lesions until they are quite large.

Regardless of who does the biopsy the individual first seeing a tissue change has responsibility for further evaluation.

11. Do you think that exfoliative cytologic studies are consistently valid?
Yes: 43 No: 114

Comment: This percentage of "yes" responses is too high. It seems highly improbable that surface cellular studies could be accomplished including all the oral mucosa. Most authorities agree that these studies are not as valid as the Pap smear tests for cervical cancer. However, it may serve as an adjunct to other proven examination procedures.

12. Is X-ray therapy the best treatment for oral cancer?
Yes: 4 No: 140

Comment: The best treatment, at present, is total removal and elimination of excitatory mechanisms. However, it would be presumptuous to state that X-ray therapy has no place in treatment, particularly in advanced cases.

13. Is surgery the best treatment for oral cancer?
Yes: 82 No: 58

Comment: See comment for Question 12

14. Does a combination of surgery and X-ray therapy usually give the best results?
Yes: 101 No: 32

Comment: Here again the response depends on the state or severity of the disease. If there is doubt as to complete surgical excision, X-ray may benefit.

15. Do you believe that the dentist has a legal obligation to examine for the oral manifestations of cancer?
Yes: 150 No: 35

Comment: With present knowledge and the inconsistent plethora of the clinical appearance of malignant lesions it is doubtful if liability would accrue. However, the dentist does have a moral duty to examine thoroughly and keep abreast of new findings. One member of the committee disagrees, his rationale being that the dentist need only recognize the abnormality.

16. Do most oral malignancies occur in the 20–30 age group?
Yes: 4 No: 165

Comment: Squamous-cell carcinoma is perhaps the most common oral cancer and can occur at any age. However, statistically it is a disease of older people. In 1966 the average age was 55, and men were predominantly affected.

17. Do you agree that oral malignant lesions are usually painless?
Yes: 156 No: 23

Comment: It is thought that early lesions are overwhelmingly painless. However, as the lesion proceeds and ulcerates it becomes secondarily infected and pain is a predominant feature.

18. Can other malignancies spread to the oral structures?
Yes: 163 No: 9

Comment: Indeed they can. The rich blood and lymphatic system of the head and neck provide susceptibility. There appears to be an increase within the past few years. This is probably due to the increased life expectancy and hence the increased cancer incidence. The practitioner should review the theory of transcelomic dissemination.

Intra-osseous lesions are most frequently in the region of the mental foramen. They are radiolucent with certain exceptions; metastatic lesions from the prostate are usually radiopaque, while those from the breast are either osteolytic or osteoblastic.

Lesions of the soft tissue are varied. However, generally they occur as a single mass, have a broad base, are indurated, and are deeply invasive.

19. Is the predominant type of oral cancer squamous-cell carcinoma?
Yes: 151 No: 9

Comment: Most certainly. The "no's" and "no answer" more than likely reflect the fact that practicing dentists forget classification of oral malignancies.

20. Do you agree that squamous-cell carcinoma generally spreads via the blood stream?
Yes: 74 No: 78

Comment: Generally, carcinomas spread via lymphatic routes and sarcomas via hematogenous routes. There are, however, notable exceptions. This emphasizes the importance of palpation of the cervicofacial lymph nodes. Usually nodes affected by cancer spread are quite hard, matted, bound down, and painless. Unfortunately, the disease does not always follow what is considered the normal pathways. The contralateral side may be affected, making discovery of the primary site difficult.

21. Is ameloblastoma the most common malignancy in the oral cavity?
Yes: 13 No: 124

Comment: No. There are divisive opinions concerning the odontogenic tumor ameloblastoma. It fulfills all the requirements of a malignant neoplasm, with the possible exception of the ability to spread to distant sites. Like the basal-cell carcinoma, it is deeply invasive and spreads by local extension. Regardless, it is much more rare intra-orally than squamous-cell carcinoma.

22. Can adenocarcinoma occur in the oral cavity?
Yes: 131 No: 11

Comment: Yes. The oral cavity is replete with salivary glands, major and minor. Because this tissue is present, adenocarcinomas can and do occur in the mouth. They exhibit the usual features of malignancies and behave very aggressively.

23. Is oral cancer usually preceded by leukoplakia?
Yes: 57 No: 88

Comment: The term "leukoplakia" means different things to different people. To many it indicates a microscopic diagnosis; to others it is a white lesion such as Fordyce's granules or focal keratosis. Keratinization of the oral mucosa is not normal. Although the cells have the potential to produce keratin it is not a feature of wet epithelium. When keratoses do occur, they are usually protective mechanisms. In general, when leukoplakia does appear, the causes should be immediately investigated. In general, the red lesions or erythroplasias are more suspect than white lesions.

24. Do you believe that the 5-year oral cancer survival rate could be improved by more thorough examinations?
Yes: 167 No: 5

Comment: In 1964 the 5-year survival was only 29 per cent for all reported intra-oral cancers, but for those lesions detected early the 5-year survival was 54 per cent. In other words, the survival was almost doubled when discovered early. Only through early recognition and adequate prescription can statistics be improved.

25. Do you think your dental school prepares graduates to do complete oral examinations for the detection of possible malignant lesions?
Yes: 101 No: 69

Comment: The method of examination of the mouth of various forms of oral tumors is part of the curriculum of every dental school. However, if for some reason the dentist feels inadequately prepared in this field he has an obligation to seek further knowledge or training. Probably the busier a practicing dentist becomes the more he compromises the oral examination.

General Conclusions

In general, malignant lesions of the oral cavity are in an area which is readily accessible, easily seen, and frequently examined. Despite this, the 5-year survival rate is only 29 per cent. Yet in early diagnosis and treatment it can be increased to 54 per cent. Statistically, the survival rate is lower only in the stomach and lungs, which are inaccessible. Some reasons for the poor survival rate of squamous-cell cancer are (1) over one-half are primary in the tongue where metastasis is early, (2) over 50 per cent are poorly differentiated, hence highly malignant, and (3) the lesions are not recognized early.

The dentist has no control over the first 2 factors, but he can and must improve the survival rate by early recognition.

It appears that the members of the dental profession should be making more extensive use of their talents by fully exploiting the opportunities to render a valuable health service, by assuming a role in the detection of nondental diseases of the oral cavity and contiguous areas.

A systematic method of examination is essential. In this way all areas will be evaluated. In addition, all suspicious changes should be considered malignant until proven otherwise. Perhaps then we can discharge our obligation and provide a health service to the public.

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►HEALTH DEPARTMENT NOTES

Laboratory Services in the D. C. Health Services Administration

A WIDE VARIETY of laboratory services that may be of assistance to private physicians in the District of Columbia is offered by the Bureau of Laboratories of the D.C. Health Services Administration at 300 Indiana Avenue, N.W. Physicians are invited to use these services, which include chemistry, microbiology, cytology and serology.

These services are available to physicians whose patients are indigent, except in those areas that have been declared in the public interest, such as emergencies and the control of syphilis, gonorrhea, tuberculosis and other communicable diseases. In these instances the resident population, regardless of economic status, may benefit from the laboratory procedures.

Laboratory services are offered through various administrative units. The several sections of the Chemistry Division are involved in testing for drug identity and purity, in verifying the quality of food products sold in the District, in assisting the police in matters of toxicology, in determinations regarding possible lead poisoning, and in clinical chemical analysis. Much sophisticated equipment is on hand in the chemistry laboratories, and the staff of qualified personnel is able to offer assistance to instances requiring special techniques.

Diagnostic bacteriology, environmental bacteriology, virology, mycology and parasitology are among the specialties included in the Microbiology Division. The virology laboratory serves the needs of the D.C. Department of Human Resources as well as those of the private sector. Cases of possible food-borne illness are investigated by epidemiologists with the close coöperation of the microbiology laboratories. Sputum specimens are examined to aid in the diagnosis of tuberculosis. Methodology is available for the identification of parasites such as pinworms and for fungi such as *Candida*.

The Pathology Division, with the advice and assistance of a certified pathologist, provides screening methods for the detection of cervical cancer. Twenty-four clinics, operated by the D.C. Health Services Administration, are making use of the cytology screening unit. The services are available to private physicians in those cases in which the patient is unable to pay for the tests at a private laboratory.

Serologic tests for syphilis and other types of immunologic procedures are performed in the Serology Division. Questions relating to pre-marital blood tests may be referred to this group since they have information relating to the marriage requirements in all 50 states. Personnel in this division are able to validate pre-marital certificates from out-of-state laboratories. Information to assist in the diagnosis of certain fungal and bacterial diseases is provided by tests performed in this division.

The Accreditation Division offers consultation and quality control services to clinical laboratories operated by the D.C. Health Services Administration. It also evaluates the methods and proficiencies of private laboratories within the District of Columbia for the control of communicable diseases. A close coöperation exists with the staff of the National Communicable Disease Center in Atlanta. This group has responsibility for licensing District Laboratories under the Clinical Laboratories Improvement Act of 1967. This act covers laboratory activities in interstate commerce, but, by definition in the Act, the District of Columbia is regarded as interstate territory.

All of the divisions have access to the latest equipment including fluorescent microscopes, gas chromatographs, and several types of automated analyzers.

Organizational arrangements within the *Bureau of Laboratories, Directorate for Preventive Services* are shown below:

Office	*Person in Charge*	
Associate Director for Preventive Services	Charles R. Hayman, M.D., M.P.H.	
Office of the Chief Bureau of Laboratories	Dr. Alston Shields	629-3623
Accreditation Division	Dr. Fernando Sanchez	629-4230
Chemistry Division	Dr. Joseph Crisler	629-3653
Microbiology Division	Dr. Walter Callahan	629-2217
Pathology Division	Dr. Tatiana Antonovych	629-3339
Serology Division	Allen Disque	629-3635

Specimens may be delivered to the laboratories between 8 a.m. and 4:30 p.m. on week days. At other times contact the guard at the Municipal Center, 300 Indiana Avenue, N.W. Infectious materials may be mailed to the D.C. Health Services Administration, Bureau of Laboratories, Room 6154, 300 Indiana Avenue, N.W. only in containers approved by the Post Office Department.

Many of the services of the Bureau of Laboratories provide information which may be useful to physicians diagnosing and treating diseases. Some of the activities relate to the preservation of a wholesome environment.

RAYMOND L. STANDARD, M.D., M.P.H.
Director, D.C. Health Services Administration

Patients Needed at Clinical Center

The coöperation of physicians is requested in the referral of women with infertility or problems of the menstrual cycle for studies being conducted by the National Institute of Child Health and Human Development's Reproduction Research Branch at the Clinical Center, National Institutes of Health, Bethesda, Md.

Endocrine and gynecologic studies will be performed as indicated, and selected patients may undergo more intensive studies and therapy. Induction of ovulation will be performed as appropriate.

Physicians interested in having their patients considered for this project, or who wish more information about the study may write or call Dr. Griff T. Ross or Dr. Jay Grodin, Clinical Center, Room 10-B-09, National Institutes of Health, Bethesda, Md. 20014; telephone: (301) 496-4686.

The coöperation of physicians is requested in the referral of patients of any age with immune deficiency diseases for a continuing study being conducted by the National Cancer Institute's Immunophysiology Section at the Clinical Center, National Institutes of Health in Bethesda, Md.

Patients with the Wiskott-Aldrich syndrome, ataxia telangiectasia, thymoma and hypogammaglobulinemia, dysgammaglobulinemia, agammaglobulinemia, the Di George syndrome, and the lymphopenic forms of agammaglobulinemia are being admitted to the Clinical Center for evaluation and study. Patients with unexplained recurrent infection, particulary those with a family history suggestive of hereditary immune deficiency, are also being evaluated. Every effort will be made to assist the referring physicians in the care of such patients. A full report of all studies done as well as recommendations for therapy will be made available soon after the patient is discharged. In some instances specific therapy with gamma globulin injections or bone marrow transplantation may be appropriate and will be undertaken after consultation with the referring physician.

Physicians interested in having their patients considered for admission to this study may write or telephone Dr. Warren Strober, Dr. R. Michael Blaese, or Dr. Thomas A. Waldman, Clinical Center, Room 4-N-114, National Institutes of Health, Bethesda, Md. 20014; telephone: (301) 496-6781.

Answers to Questions About Drug Abuse*

Model airplane glue, gasoline, paint thinner and other volatile solvents have been reported as abusable substances. What are their effects?

These substances, which were obviously never meant to be taken by man, contain a variety of chemicals, some quite dangerous. Others are toxic only when used over long periods. They provide a clouded mental state that can develop into a coma. Temporary blindness has been reported. Death is known to occur when the solvent is inhaled without sufficient oxygen as, for example, when the individual loses consciousness and his mouth and nose fall into the plastic bag containing the solvents. Damage to bone marrow, kidneys and lungs has been described in autopsy reports.

*From "A Federal Source Book: Answers to the most frequently asked questions about drug abuse," available from the Superintendent of Documents, Dept. D, Government Printing Office, Washington, D. C. 20402.

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Readers will notice a change in the typestyle of the ANNALS. This entailed switching from a letterpress method of composition to a keyboard-computer offset method of composition. This has been done for the sake of economy. The Editor hopes that the readers will approve of this change.

►NEW MEMBERS

Active

JOHN EDELSBURG, M.D. Office: 5540 Neveda Avenue, N.W. Born in Washington, D.C. Medical degree: University of Rochester, 1967. Specialty: General Practice.

JOSEPH FERMAGLICH, M.D. Office: Georgetown University Hospital. Born in New York City. Medical degree: University of Buffalo, 1961. Specialty: Neurology.

HOWARD A. HOFFMAN, M.D. Office: 2141 K Street, N.W. Born in Cleveland, Ohio. Medical degree: Western Reserve University, 1962. Specialty: Psychiatry.

WILLIAM F. JACOBS, M.D. Office: 1714 N Street, N.W. Born in Chicago, Ill. Medical degree: University of Texas. Specialty: Internal Medicine.

RONALD KAUFMAN, M.D. Office: 901 23rd Street, N.W. Born in Hartford, Conn. Medical degree: University of Pennsylvania, 1955. Specialty: Internal Medicine.

JOHN LAROSA, M.D. Office: 2150 Pennsylvania Avenue, N.W. Born in Pittsburgh, Pa. Medical degree: University of Pittsburgh, 1965. Specialty: Internal Medicine.

ERIKA LATCHIS, M.D. Office: 825 New Hampshire Avenue, N.W. Born in Heilbronn, Germany. Medical degree: Ludwig-Maximiliams Universitat, Munich, Germany, 1963. Specialty: Obstetrics & Gynecology.

RICHARD RESTAK, M.D. Office: 2121 Pennsylvania Avenue, N.W. Born in Wilmington, Del. Medical degree: Georgetown University, 1966. Specialty: General Practice.

HAROLD WEISS. M.D. Office: Providence Hospital, Born in New York City. Medical degree: University of Chicago, 1959. Specialty: Internal Medicine.

Associate

KENNETH LATCHIS, M.D. Office: 6556 Jay Miller Drive, Falls Church, Va. Born in Brattleboro, Vt. Medical degree: University of Vermont, 1961. Specialty: General Surgery.

Resident-Intern

LEONARD CUTLER, M.D. Office: Washington Hospital Center. Born in New York City. Medical degree: University of Maryland, 1969.

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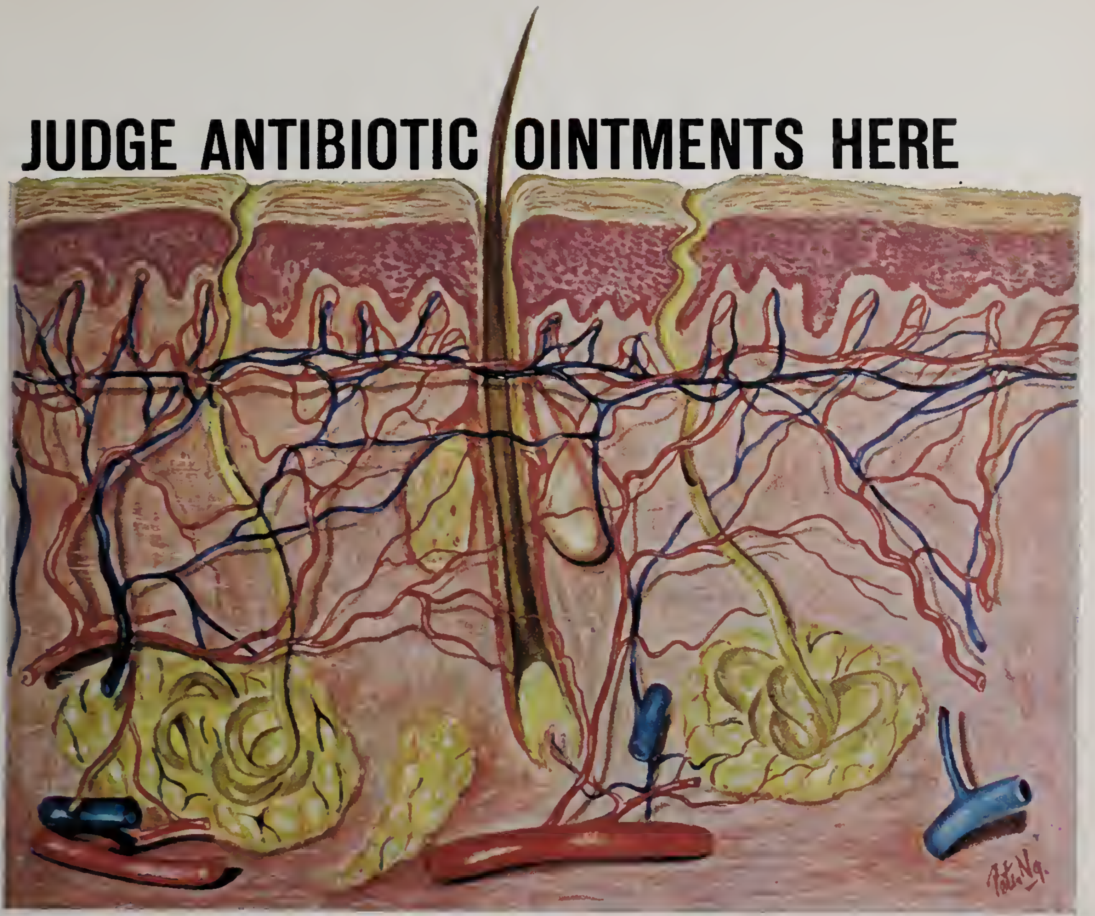

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WARNING: Do not give in advanced kidney or liver disease. PRECAUTIONS: Trocinate relaxes all smooth muscles. Large dosage or prolonged usage may cause feeling of weakness or can theoretically precipitate gall-bladder colic, due to relaxing the vascular and duct systems. Caution should be observed in patients with urinary bladder obstruction. DOSAGE: 400 mg. May be repeated in 4 hours. After relief, lengthen the dose frequency. (see side note)

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News & Personals

Executive Board Action

Board of Credentials: On Recommendation of the Board of Credentials, 9 applicants were elected to Active membership, 1 to Associate membership, and 1 to Resident-Intern membership. Their names appear on page 529.

Approval was given to the following changes in membership status:

Transfers

Active to Associate: Norman H. Rubenstein

Resignations

Active: Alice H. Altstatt and Sophie L. Perry

Dr. Theodore C. Fong was elected to Life membership.

Vice Admiral George M. David, new Surgeon General of the U.S. Navy, was elected to Honorary membership.

►GENERAL NEWS

The American Academy of Pediatrics began operating a permanent office July 1st at 1800 North Kent Street, Arlington, Va. 22209. The Washington area office is an extension of the AAP's Department of Government Liaison which was established and approved by the Academy Executive Board last April. Through this office the Academy will maintain close contact with all agencies of the federal government engaged in health programs affecting children.

Mr. George Degnon has been named director of the Department of Government Liaison and will administer the activities of the Department from the office in Washington. He was formerly administrative assistant for the Academy Council on Pediatric Practice.

A 3-year residency program in the Department of Pediatrics at **Freedmen's Hospital** has been approved by the Residency Review Committee of the Council on Medical Education of the American Medical Association.

The **George Washington University Medical Center** announces the appointment of **Dr. Mahmoud Mourad** as Associate Professor of Medicine in the new Division of Rehabilitation Medicine. He is director of the training program at the Research and Training Center.

Dr. Mourad holds the Certificate of Merit from the Caribbean Congress of Physical Medicine, the Physician's Recognition Award from the American Medical Association, and the Distinguished Achievement Award from the British Society of the Two Thousand Men of Achievement.

Robert Petrusky of Linwood, New Jersey has been chosen the recipient of the 1970 **Dr. Benjamin Lee and Dorothy Gordon Memorial Scholarship.** Mr. Petrusky, a Phi Beta Kappa graduate of Rutgers University, has received $5,000 to attend the Medical School of the University of California at Los Angeles. This has been awarded by the Scholarship Committee of the Atlantic County Medical Society, Ventnor, N. J.

The Dr. Benjamin Lee and Dorothy Gordon Memorial Scholarship has been donated by Dr. Maurice B. Gordon and is being used as a model to encourage physicians to donate similar $5,000 scholarships through their County Medical Society to enable worthy local pre-medical students to attend medical school.

The **Navy Medical Service Corps** celebrated its 23rd anniversary in August. Founded by the Army-Navy Medical Service Corps Act of August 4, 1947, the 1500 officer Corps is currently headed by Captain Emmet L. Van Landingham, Jr. who assumed his duties in 1968.

The Medical Service Corps is composed of six sections. Officers serving in the Health Care Administration Section, the largest of the six, provide management and administrative support to the Navy's doctors and dentists. The other five sections – Medical Allied Science, Pharmacy, Optometry, Podiatry, and Medical Specialist – are staffed with officers who compliment and support the professional functions of patient care.

Dr. Paul C. Zamecnik has been selected by the Passano Foundation, Inc., to receive the $7,500 **Passano Award for 1970**. Dr. Zamecnik received the Award for his pioneering investigations that opened the process of protein synthesis to direct study, a chemical process in both normal and tumor or cancer cells.

Dr. Zamecnik is Professor of Oncologic Medicine at the Howard University College of Medicine and Director of J. Collins Warren Laboratories of Huntington Memorial Hospital at Massachusetts General Hospital in Boston.

Three new appointments to the faculty of the **Georgetown University School of Medicine** became effective on July 1.

Dr. Sarah E. Stewart has been appointed professor of pathology. After receiving her Ph.D. in 1939, she became the first woman to receive an M.D. degree from Georgetown University. She has received several awards, including the Lenghi Award from the National Academy of Italy in 1963 and the Federal Woman's Award in 1965.

Dr. Yvonne Brackbill, who received her Ph.D. from Stanford University in 1956, has been appointed professor of obstetrics and gynecology, and pediatrics. Dr. Brackbill's work has concerned research in the field of psychological development of the newborn and the psychology of family planning. She has been granted the Research Scientist Award of the National Institutes of Mental Health for 5 years.

At a recent meeting of the District of Columbia Division of the **American Cancer Society** the Board of Trustees elected Dr. S. Joseph Cosimano as *President* for the coming year.

Named as *Vice Presidents* by the trustees were: John J. Ahearn, John F. Feeney, LaSalle D. Leffall, Jr., William P. McClure, Cyril A. Schulman, and Frank H. Weitzel. Also named as officers were: Frank G. Jost, *Treasurer* and Hilda Wexler, *Secretary*. Mrs. Malcolm Tiggle and Calvin W. Rolark were re-elected presidents of the Division's Northeast and Southeast Units respectively.

As a service to D.C. Medical Society members, individual **Uniform Stamps for International Certificates of Vaccination** may be obtained. Application must be made in person at the Medical Society offices.

On July 23 the District of Columbia Division of the **American Cancer Society** moved their offices to the Universal Building, South, 1825 Connecticut Avenue, N.W., Washington, D.C. 20009; telephone: 483-2600.

Dr. Robert S. Ledley has been appointed professor of physiology and biophysics. A computer-scientist, Dr. Ledley is director of the National Biomedical Research Foundation which has recently become affiliated with Georgetown University. Dr. Ledley holds a master's degree in mathematics from Columbia University and received a D.D.S. from New York University in 1948. He is the author of nearly 100 articles on computer applications in biomedical science and has written five books.

The **American Board of Family Practice** announces that it will give its second examination for certification in various centers throughout the United States. The examination will be over a 2-day period, February 27-28, 1971. Information regarding the examination and eligibility for the examination may be obtained by writing Dr. Nicholas J. Pisacano, Board Secretary-Treasurer, University of Kentucky Medical Center, Annex 2, Room 229, Lexington, Kentucky 40506.

Dr. John Naughton has been appointed Professor of Medicine and Director of the new Division of Rehabilitation Medicine at the George Washington University Medical Center. Dr. Naughton was formerly director of the Rehabilitation Center at the University of Illinois.

Georgetown University has recently received a grant in the amount of $24,000 from the Pharmaceutical Manufacturers Association Foundation enabling Dr. William T. Beaver, associate professor of pharmacology and anesthesiology, to study the effects of drugs on human subjective responses.

At its May 28 meeting, the **Board of Directors of Doctors Hospital** elected the following officers:

Donald H. Stubbs, M.D., *Chairman and Secretary*; Paul S. Putzki, M.D., *Vice Chairman*; Oscar B. Hunter, Jr., M.D., *President;* George P. Blundell, M.D., *Vice President;* and Arthur A. Morris, M.D., *Treasurer.*

PERSONALS

Dr. Robert J. Coffey (left of portrait) with several of his former classmates.

Dr. Robert J. Coffey, Chairman of the Executive Board of the Medical Society of the District of Columbia, was honored at the June 13th Georgetown University School of Medicine Alumni Day ceremonies by his former classmates. A portrait of Dr. Coffey was presented to the medical school "as a token of our appreciation and our esteem."

Dr. Coffey, Professor of Surgery, was Chairman of the Department of Surgery at Georgetown for 22 years. During that time he was President of the Southern Surgical Association, the Southeastern Surgical Congress, and the Medical Society of the District of Columbia. He also served on the Board of Governors of the American College of Surgeons.

Dr. T. James Waters, Associate Professor of Medicine at Georgetown University, has designed the first system for teaching dynamic, live palpitation to a large group. This new system enables nearly 300 physicians and medical students to simultaneously evaluate a patient's arterial impluse through individual palpator units as they attempt to diagnose his case. The new system was jointly researched, developed and clinically evaluated by Georgetown University and the Humetrics Corporation.

Dr. S. Joseph Cosimano was elected President of the American Cancer Society, District of Columbia Division by the Society's Board of Trustees following the recent annual meeting of the health agency. Dr. Cosimano succeeded Dr. James L. Harrison on September 1.

In addition to being elected President, Dr. Cosimano also received the Society's 15–year Volunteer Service Award. He has served the Division as Vice–President and member of the Executive Committee of the Board of Trustees. Dr. Cosimano's special interest has been in the Society's public education programs, where he has served as Chairman of the Public Education Committee for 4 years.

A native of Washington, D.C., Dr. Cosimano received his B.S. degree in 1948 from Georgetown University. He received his M.D. degree from Georgetown University Medical School in 1952 where he also did his residency in surgery from 1953–1957. He is currently in private practice in the District of Columbia. Active in community affairs, he is football team physician at Landon School.

Dr. Jerome W. Canter has been elected President of the Medical Alumni Association of the George

Washington University. A 1955 graduate of the medical school, Dr. Canter is Assistant Clinical Professor of Surgery at G.W.

Dr. Saul Holtzman was elected to the Board of Directors of Doctors Hospital at its Annual Stockholders Meeting May 12. Dr. Holtzman also serves as Treasurer of the Medical Staff's Executive and Credentials Committee.

MEETINGS

Georgetown University Medical Center announces a course in **Orthopedic Pathology** to be held at the Marriott Motel, Key Bridge, Rosslyn, D.C., January 3–10, 1971. This 80-hour course, including 30 hours of laboratory direction, will be presented by Dr. Lent C. Johnson of the Armed Forces Institute of Pathology. For further information contact Dr. G. W. Hyatt, 3800 Reservoir Road, N.W., Washington, D.C. 20007.

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OBITUARIES

Joseph William Vogg, M.D.
(1937–1970)

Dr. J. William Vogg, otolaryngologist with the Washington Clinic, died July 18, 1970, at the New England Baptist Hospital in Boston. He lived at 9805 Montauk Avenuue, Bethesda, Md.

A native of Chicago, Ill., Dr. Vogg was born October 7, 1937. He received his Bachelor of Arts degree in 1959 and his medical degree in 1962, both from the University of Illinois. He interned at Charity Hospital in New Orleans, La. from 1962 to 1963 and served a residency at Georgetown University Hospital from 1965 to 1969.

Dr. Vogg served as a Lieutenant in the Naval Medical Corps from 1963 to 1965.

He had been an instructor at Georgetown University School of Medicine since 1969 and was an Active member of the Medical Society of the District of Columbia.

He leaves his wife, Mrs. Barbara McGill Vogg, and 3 sons, Steven, Mark and Scott; all of the home address.

James Melvin Corcoran, M.D.
(1915–1970)

Dr. James M. Corcoran, chief of the obstetric and gynecology staff at the Washington Hospital Center, died July 19, 1970. He lived at 4800 Sedgwick Street, N.W.

A Washingtonian, Dr. Corcoran was born on May 17, 1915, attended schools in the District of Columbia and graduated from Western High School. He received his B.S. degree from Notre Dame University in 1938 and his medical degree from Georgetown University in 1942. From 1942 to 1943 he interned at Garfield Memorial Hospital, and from 1943 to 1947 he served residencies at Garfield Hospital and at the University Hospital of Cleveland, in Ohio.

Dr. Corcoran began practice in the District of Columbia in 1947 and was at that time elected to Active membership in the Medical Society of the District of Columbia. He was also a member of the American Medical Association.

He is survived by his wife, Mrs. Katherine Hassett Corcoran, a daughter, Kathleen, and 4 sons, James E., of Greenbelt, Md., Joseph M., of Kent, Ohio, and James P. and Thomas M., both of Washington.

Andrew Anthony Marchetti, M.D.
(1901–1970)

Dr. Andrew A. Marchetti, Professor of Obstetrics and Gynecology at Georgetown University for 23 years, died June 24, 1970. He lived at 3495 South Leisure World Blvd., Silver Spring, Md.

Dr. Marchetti was born in Richmond, Va., July 2, 1901. He received his A.B. degree from the University of Richmond in 1924 and his medical degree from Johns Hopkins University in 1928. After interning in obstetrics at Johns Hopkins from 1928 to 1929, he served residencies at the University of Rochester's Strong Memorial Hospital, Cincinnati General Hospital, and the New York Hospital of the Cornell University Medical College. He taught at Cornell from 1933 until 1947 when he came to Georgetown as Professor and Chairman of the Department of Obstetrics and Gynecology. He resigned as department chairman in 1966, but remained on the staff as a full-time professor.

One of the developers of the Marshall-Marchetti operation to correct urinary stress incontinence in women, Dr. Marchetti was also involved in the development of the Pap smear test and was the author of numerous scientific articles.

He was a Fellow of the American Gynecological Society and President from 1966 to 1967, a Fellow in the American College of Obstetrics and Gynecologists and Vice President from 1958 to 1959, and a Fellow in the American College of Surgeons. In 1941 Dr. Marchetti became a Diplomat of the American Board of Obstetrics and Gynecology and had been President of the Board since 1966. An Active member of the Medical Society of the District of Columbia, he also held membership in the American Association of Obstetricians and Gynecologists and the American Medical Association.

He is survived by his wife, Mrs. Katherine F. Marchetti, of the home address; 4 sons, M. Anthony, of Frederick, Md., Peter L., of Atlantic City, N.J., Navy Lt. Michael J., of Long Beach, Calif., and John P., serving in the U.S. Army in Germany; and a sister, Elda Marchetti, of Richmond, Va.

William Patrick Hynes, M.D.
(1889–1970)

Dr. William P. Hynes, former chief of radiology at the Veterans Administration Hospital died July 27, 1970, at his home, 155 Annandale Road, Pasadena, Calif. He had lived in Pasadena since 1958.

Born August 14, 1889, in O'Neill, Neb., Dr. Hynes received his bachelor's degree and in 1912 his medical degree from Creighton University.

Dr. Hynes practiced privately in Nebraska until World War I when he joined the Army Medical Corps and served as a first lieutenant in England and in France. After the war, he joined the Veterans Administration serving in Florida, Louisiana, and California until World War II, when he rejoined the Army. He retired as a Lieutenant Colonel in 1946 and worked full time with the VA in the District of Columbia until his retirement in 1953.

An Associate member of the Medical Society of the District of Columbia, he also held membership in the American Medical Association, the American College of Radiology, and the Association of Military Surgeons.

He is survived by his wife, Mrs. Alberta Hynes, of the home address, 3 sons, 2 daughters, and a sister, Nell McCormick, of Salem, Ore.

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Edgar Willingham Davis, M.D.
(1896–1970)

Dr. Edgar W. Davis, Washington pioneer in thoracic and cardiac surgery, died July 17, 1970, at the Washington Hospital Center. He had retired from practice in 1960 and lived at 3900 Watson Place, N.W.

Born in Five Mile, Ala., on August 27, 1896, Dr. Davis received his B.S. degree from the University of Alabama in 1920 and his medical degree from Emory University in 1922. He interned at Sheltering Arms Hospital in Hansford, W. Va. and Wesley Memorial Hospital in Atlanta from 1922 to 1923 and served residencies at Santo Tomas Hospital in Panama and at the Wesley Memorial Hospital from 1923 to 1926. Dr. Davis engaged in the private practice of surgery in Birmingham, Ala., until 1934 when he became Instructor in Surgery and Associate in Thoracic Surgery at the University of Michigan. In 1936 after receiving his M.S. degree from Michigan, he came to Washington as Associate Professor of Surgery at Georgetown University and later became Georgetown's first Professor of Thoracic Surgery.

Dr. Davis who performed the first successful operation for cancer of the lung, the first open heart surgery under hypothermia anesthesia, and pioneered in the surgical correction of congenital defects such as chest wall deformaties in children was honored in 1962 with the Distinguished Achievement Award of the American Heart Association. He received the Certificate of Meritorious Service from the Medical Society of the District of Columbia in 1967.

Past President of the Southern Thoracic Surgical Association, Dr. Davis was a Fellow of the American College of Surgeons and a member of the Southeastern Surgical Congress. He was certified by the American Board of Surgery and the American Board of Thoracic Surgery, and for many years was a member of the Board of Governors of the American College of Chest Physicians. He was also a member of the Board of the Washington Heart Association. In addition to authoring many scientific articles, Dr. Davis led the movement which resulted in the creation of the Research Foundation at Children's Hospital serving subsequently as President of the Foundation and later as a member of the Board of Trustees.

Dr. Davis was a member of the American Medical Association and was an Active member of the Medical Society of the District of Columbia from 1937 until he became a Special member in 1964.

He leaves his wife, Mrs. Adrianne Peavey Davis, of the home address; 2 sons, John A., of Cincinnati, and Michael S., of Bethesda; a daughter, Mrs. Kathleen D. Smith, of Washington; a brother, Dr. A. Hobson Davis, of Ridgewood, N.J.; and 2 sisters, Mrs. Velma Tidmore and Mrs. Iula Messengale, both of Tuscaloosa, Ala.

William Pierce Waters, M.D.
(1922–1970)

Dr. William P. Waters, Associate Director of the Union Medical Center on Georgia Avenue, N.W., died, June 15, 1970, at his home at 226 46th Place, N.E. His offices were at 1806 D Street, N.E.

Born in Syracuse, N.Y., April 24, 1922, Dr. Waters attended schools in the District of Columbia. After graduating from Dunbar High School in 1939 he attended Springfield College in Massachusetts but interrupted his studies to serve during World War II. He left service as a Captain in the Army Quartermaster Corps. Returning to Springfield College, he received his B.S. degree in 1948.

He earned his medical degree from Howard University in 1952 and interned for a year at St. Elizabeths Hospital. From 1957 to 1960, as resident physician at Freedmen's Hospital, he trained in internal medicine.

He was elected to Active membership in the Medical Society of the District of Columbia in 1960.

Dr. Waters is survived by his wife, Mrs. Bessie Brewer Waters; a daughter, Mrs. Sondra W. Hammond; 3 sons, Kirk L., Keith R., and Kent P. Waters, all of Washington; and a brother, Dr. John L. Waters, of Los Angeles.

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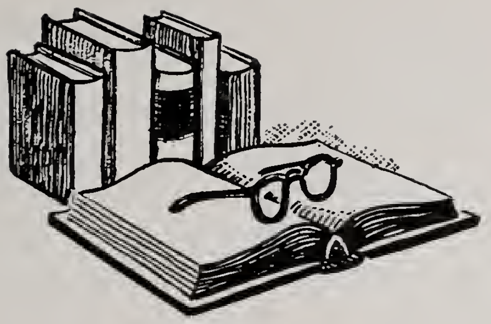

Book Reviews

The Vitreous in Clinical Ophthalmology. NORMAN S. JAFFE, M.D., F.A.C.S., F.I.C.S. Price, $32.50. Pp. 310, with 334 illustrations, including 9 in 2 colors and 2 full color plates. St. Louis: Mosby, 1969.

This excellently organized comprehensive text will serve all ophthalmologists well and would be of particular value to the neophyte. Some sections are of general medical interest. Its content reflects the observations of an accomplished clinician with a judicious eclectic approach to the world literature. In logical sequence the physiology, biochemistry, embryology, electron microscopy, and clinical anatomy of the vitreous are concisely presented as background for interpretation of clinical events. The biomicroscopic examination of the vitreous may be difficult but will be facilitated by the lucid verbal description of its biomicroscopic anatomy accompanied by fine diagrams and illustrations. Throughout the text superb photography and medical illustrations complement the narration.

The author's classification of hereditary hyaloideoretinopathies provides a welcome simplification. (In juvenile retinoschisis the dehiscence is usually at the nerve fiber layer rather than the plexiform layers as stated.) The classification of vitreous detachment and collapse is practical and accurate.

Chapters on vitreous changes attendant upon cataract surgery receive ample consideration. The surgery of anterior vitrectomy is described as a possible treatment of aphakic cystoid macula edema associated with vitreous adherence to the wound, and for vitreous loss cases, but judgment regarding efficacy is properly withheld until more cases are accumulated. Liquid vitreous aspiration or vitreous resection after vitreous loss impressively cleans the anterior chamber, but longterm prophylaxis against retinal detachment is unknown.

Theories of aqueous redistribution into the vitreous cavity are presented with a review of mechanisms of aphakic pupillary block and malignant glaucoma, to aid the surgeon in the rational selection of osmotic and other medical therapeutic agents and appropriate surgical procedures.

Of interest to the internist is the chapter on vitreous hemorrhage, which includes a brief survey of systemic and intraocular diseases responsible for that sign. Also of general medical interest are chapters on primary familial amyloidosis and diabetic retinopathy. Discussion of the fate of blood in the vitreous, retrovitreal space, and hemosideric toxicity is a summary of existing literature; the need for biochemical investigation in this area is apparent. The chapter on posterior segment foreign bodies provides basic information on toxicity, but cursory consideration of methods of localization and extraction. The virtues of ultrasonography are listed. Though not stated, it should be recognized that indirect ophthalmoloscopy is the method of choice for localization when the media permit, and a nonmagnetic metallic foreign body of unknown nature should be removed despite any current benign appearance.

WILLIAM S. GILBERT, M.D.

Symposium on Ocular Pharmacology and Therapeutics. Transactions of the New Orleans Academy of Ophthalmology. Contributors: JOHN ADRIANI, M.D., HOWARD N. BERNSTEIN, M.D., ROBERT P. BURNS, M.D., STEPHEN M. DRANCE, M.D., PHILIP P. ELLIS, M.D., WILLIAM H. HAVENER, M.D. AND KENNETH T. RICHARDSON, M.D. Price, $27.50. Pp. 311 with 98 illustrations, including 33 figures on 5 color plates. St. Louis: Mosby, 1970.

Here is a refreshing symposium presented more like a textbook than a compilation of assorted papers. Selection of panelists and topics for this symposium was obviously done with great care, producing a meaningful book that is not out of date the day of publication.

Particularly succinct sections on basic ocular pharmacology provide introductory chapters. These are followed by important chapters entitled "Neuroendocrine Concepts" and "Autonomic Pharmacology." Much of the rationale for drug use in ophthalmology can be found in these discussions.

Anti-inflammatory agents are treated in separate sections. Selected complications of ocular toxicity resulting from systemic medication are described. The extensive pharmacologic implications of glaucoma therapy are presented. Agents used in cataract care, from diagnosis to postoperative complications, are well detailed. Anesthesia is discussed from many points of view, including the agents themselves and their interactions with other drugs. A spirited round-table discussion concludes this interesting volume.

This book directs itself to an important area of ophthalmology. It carefully avoids trivia and therefore will remain current and relevant. I would recommend it as worthwhile reading for ophthalmologists.

DAVID K BERLER, M.D.

Current Diagnosis and Treatment, HENRY BRAINERD, M.D., MARCUS A. KRUPP, M.D., MILTON J. CHATTON, M.D., AND SHELDON MARGEN, M.D. Price, $11.00. Pp. 884. Los Altos, Calif.: Lange, 1970.

The purpose of the book, as stated by the authors, is to serve the practicing physician as a useful desk reference on the most widely accepted techniques currently available for diagnosis and treatment. The book is soft bound, not particularly bulky, and the type is easy to read. There are no illustrations. The table of contents is arranged both by organ systems and occasionally by types of disorder, such as arthritis and allied rheumatic disorders. The index, although not exhaustive, is certainly adequate. The authors warn that this book is not intended to be used as a textbook of medicine. They waste a considerable amount of words on treatment and pathophysiology, which, although lengthly and adds to the text, is not of sufficient detail to be of much help.

Each disease is prefaced by "essentials of diagnosis", which are findings that must be present in order to make a diagnosis. The statements, although in general are helpful, tend to be dogmatic and sometimes erroneous.

In general, the book encompasses most of the recent developments in medicine. However, there are some exceptions as there is no mention or discussion of Fibrinolysins or the dumping syndrome. There are only occasional misspellings and errors, such as on page 182 when referring to pre-infarction angina, it is written as pre-infarction azotemia. Occasionally dogmatic erroneous statements such as postnecrotic cirrhosis is never produced by alcohol, or the recommendation that anticholanergic agents be routinely used for treatment of a sliding type hiatal hernia are found.

In general, however, it gives an overall view of the current trends in diagnosis and therapy, and for the price of $11.00 may be of help for the purpose the authors recommend.

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September 19–20: National Congress on Medical Ethics. Ambassador West Hotel, Chicago. Address: Medical Ethics Department, American Medical Association, 535 North Dearborn Street, Chicago, Ill. 60610.

September 25–October 1: American Academy of General Practice. San Francisco. Address: Mr. Mac F. Cahal, Executive Director, Volker Blvd. at Brookside, Kansas City, Mo. 64112.

October 3–4: American Association of Ophthalmology. Las Vegas, Nev. Address: Mr. Lawrence A. Zupan, Executive Secretary, 1100 17th Street, N.W., Washington, D.C. 20036.

October 5–9: American Academy of Ophthalmology and Otolaryngology. Las Vegas, Nev. Address: Dr. C. M. Kos, Executive Secretary-Treasurer, 15 Second Street, S.W., Rochester, Minn. 55901.

October 11–14: Medical Society of Virginia. Hotel John Marshall, Richmond, Va. Address: Mr. Robert I. Howard, Executive Secretary, 4205 Dover Road, Richmond, Va. 23221.

October 12–16: American College of Surgeons. Conrad Hilton Hotel, Chicago, Ill. Address: Dr. C. Rollins Hanlon, Director, 55 East Erie Street, Chicago, Ill. 60611.

October 17–21: American Society of Anesthesiologists. Americana Hotel, New York, N.Y. Address: Mr. John W. Andes, Executive Secretary, 515 Busse Highway, Park Ridge, Ill. 60068.

October 17–22: American Academy of Pediatrics. San Francisco Hilton, San Francisco. Address: Dr. Robert G. Frazier, Executive Director, 1801 Hinman Avenue, Evanston, Ill. 60204.

October 25–30: American College of Chest Physicians. Century Plaza Hotel, Los Angeles. Address: Dr. Alfred Soffer, Executive Director, 112 East Chesnut Street, Chicago, Ill. 60611.

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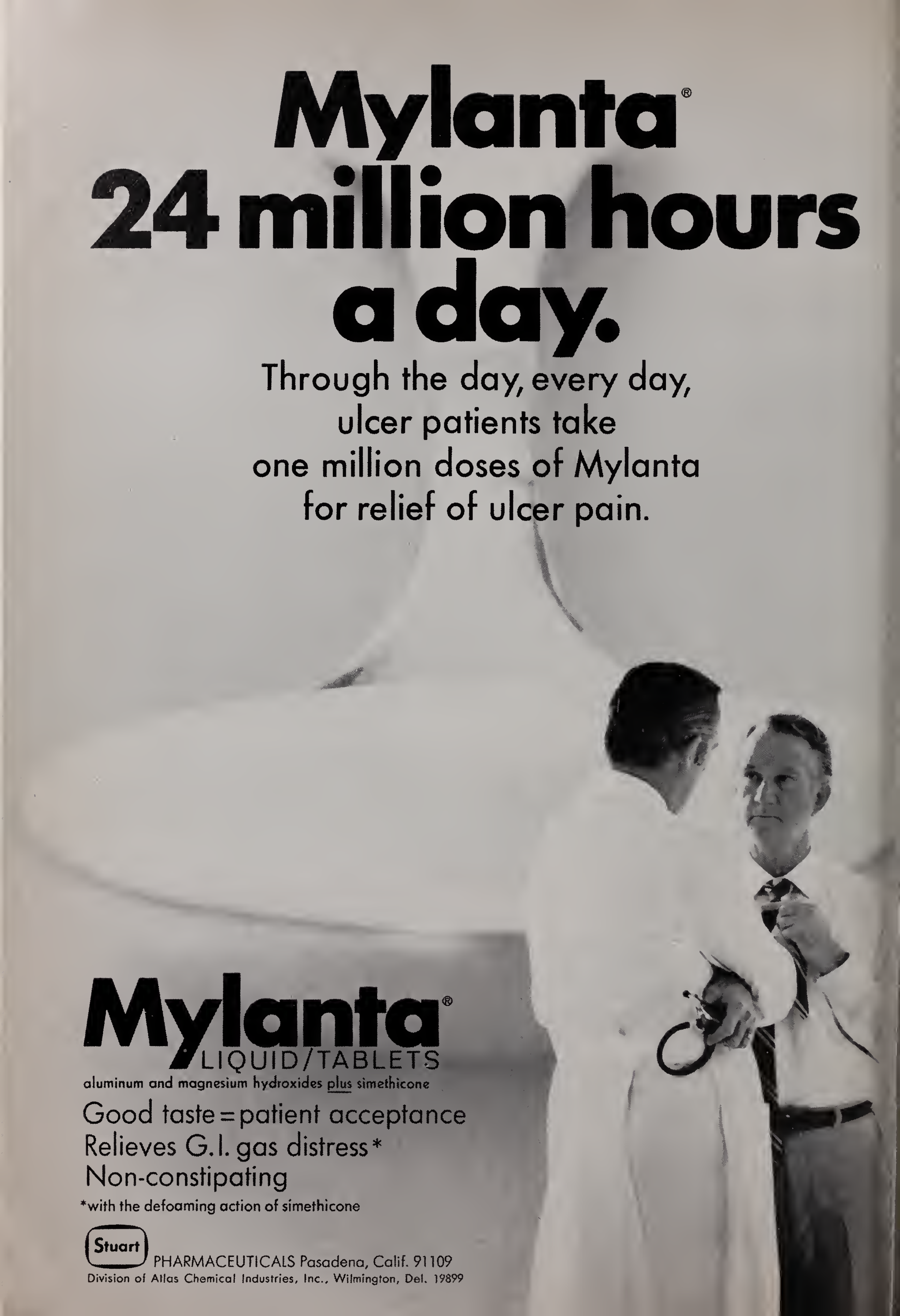

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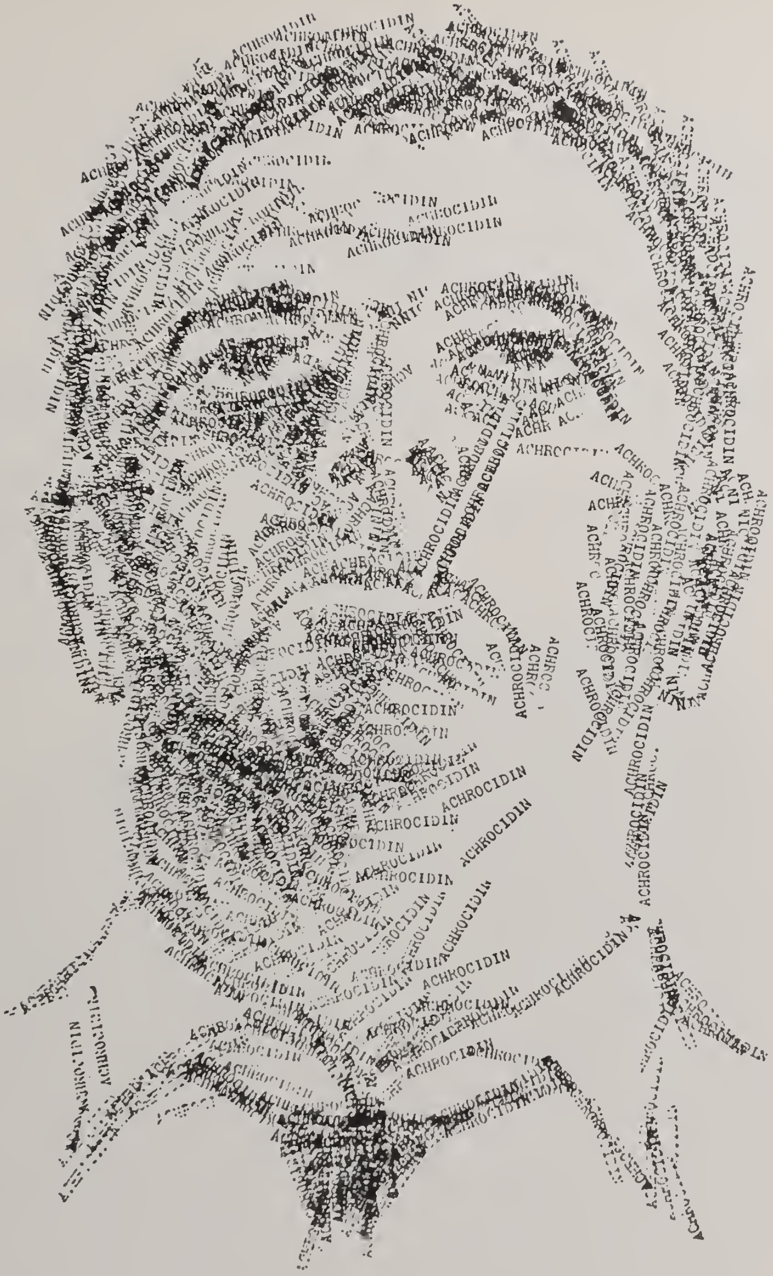

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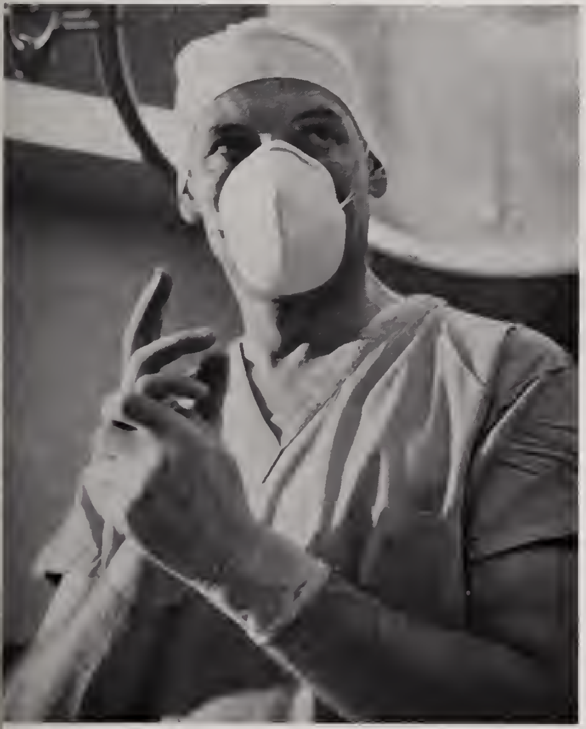

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Precautions: In the elderly and debilitated, and in children over six, limit to smallest effective dosage (initially 10 mg or less per day) to preclude ataxia or oversedation, increasing gradually as needed and tolerated. Not recommended in children under six. Though generally not recommended, if combination therapy with other psychotropics seems indicated, carefully consider individual pharmacologic effects, particularly in use of potentiating drugs such as MAO inhibitors and phenothiazines. Observe usual precautions in presence of impaired renal or hepatic function. Paradoxical reactions (*e.g.*, excitement, stimulation and acute rage) have been reported in psychiatric patients and hyperactive aggressive children. Employ usual precautions in treatment of anxiety states with evidence of impending depression; suicidal tendencies may be present and protective measures necessary. Variable effects on blood coagulation have been reporte very rarely in patients receiving the drug and oral anticoagulants; causal relationship has not been established clinically.
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A Holistic View of Man—Fantasy or Fact?
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Bloody Aspiration
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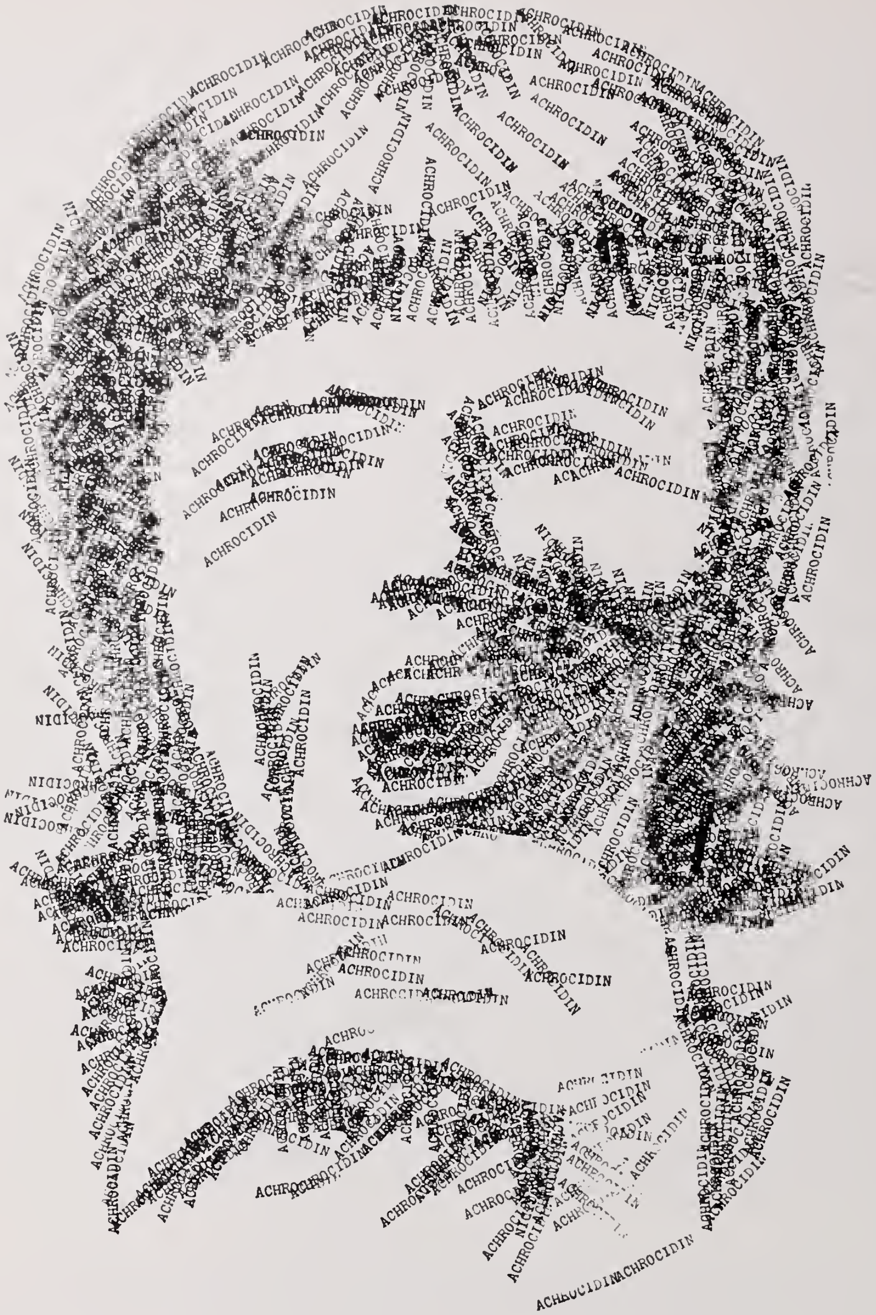

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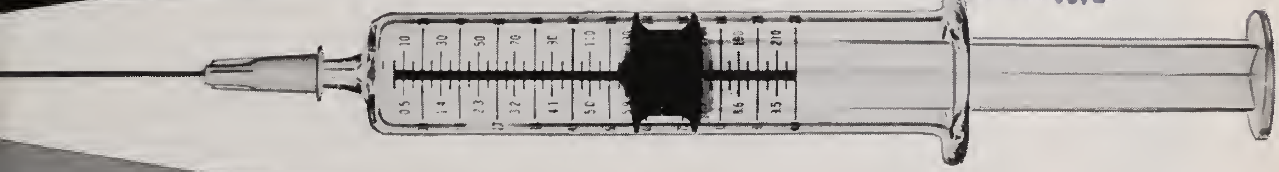

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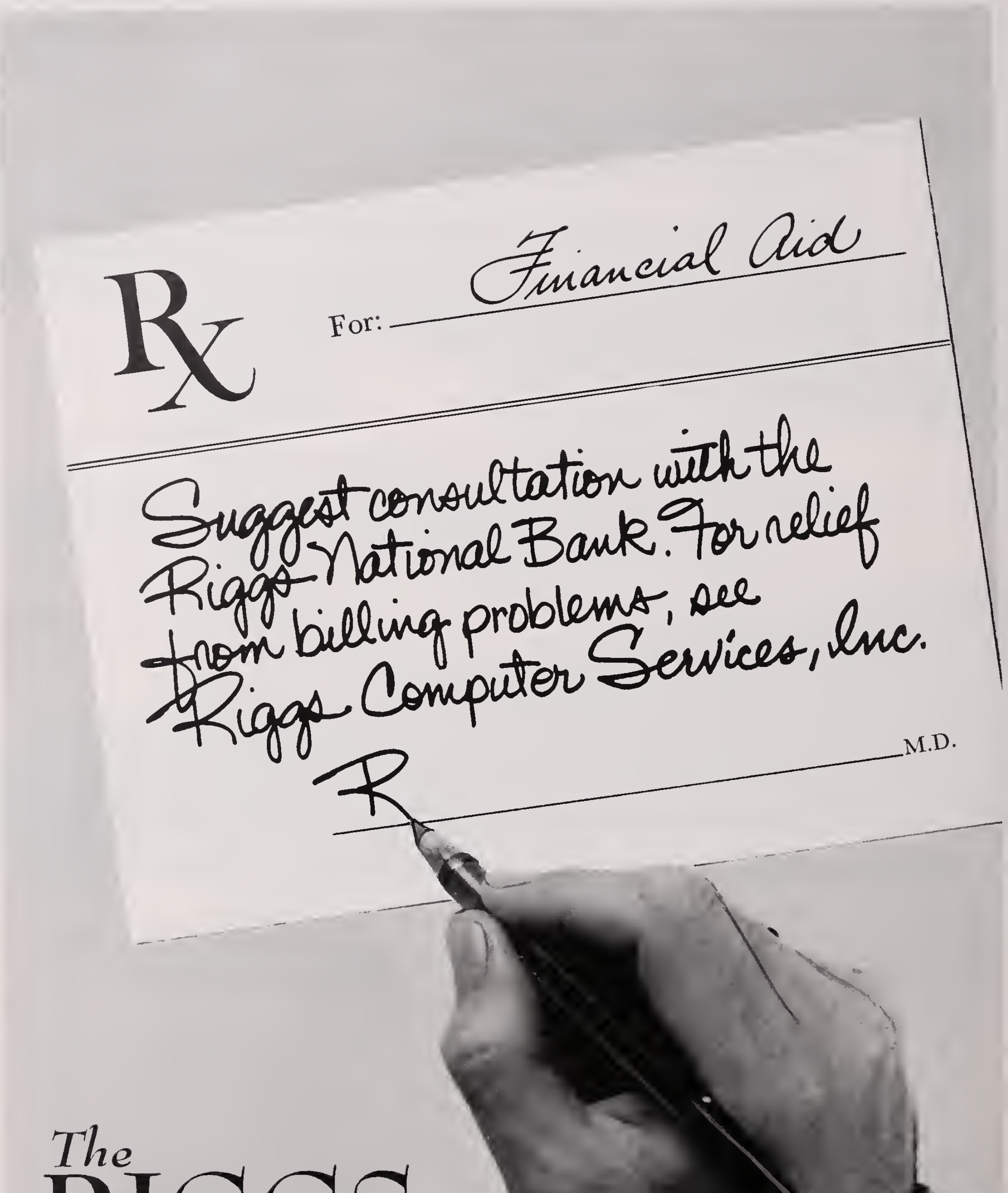

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Second-class postage paid at Baltimore, Md.
Published monthly at
Mount Royal and Guilford Avenues,
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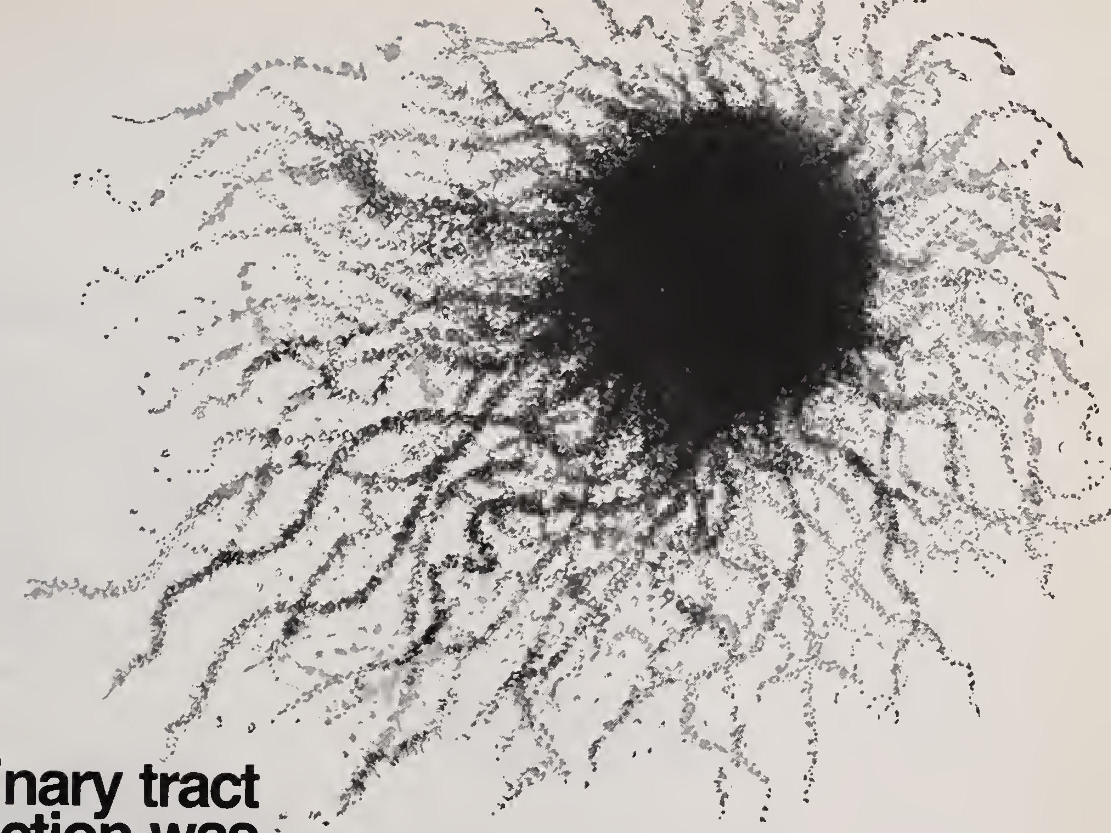

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National Naval Medical Center Number

This is the eighth of a sixth series of special numbers of the MEDICAL ANNALS, the scientific material for which is supplied by medical institutions and scientific organizations in the Washington Metropolitan area. For the NATIONAL NAVAL MEDICAL CENTER NUMBER the Editorial Board is indebted to Captain Lay M. Fox, MC, USN, Consulting Editor of the MEDICAL ANNALS, who secured the papers which appear in this issue.

Segmental Defects in Open Fractures of Long Bones*

CAPTAIN ROBERT H. BROWN, MC, USN,† AND GUY B. TOWNSEND, M.D.‡

OPEN FRACTURES OF LONG BONES are difficult to manage, but the addition of a segmental defect adds a most exasperating dimension to the problem. In the present Viet Nam conflict early helicopter evacuation of the wounded to a sophisticated treatment center has resulted in the salvage of limbs which might otherwise have been treated by amputation, and the successful prompt repair of damaged blood vessels has contributed to this dimension considerably. Because the opportunity to treat this type of injury is limited we think that our experience should be reported while the details are still available to us.

Materials

Between November 1964 and January 1970, 864 open fractures of long bones (excluding metacarpals and metatarsals) have been treated on the Orthopedic Service, Naval Hospital, Bethesda. Of the 864, 86 were open fractures with associated segmental defects of long bones. Thirty patients had significant segmental defects and only 2 were not combat incurred.

What constitutes a significant defect? We consider a defect not significant when a volume of bone has been blown away by a high velocity missile leaving a portion of the bone either remaining appositionally in contact or in direct continuity. These bones can be treated by applying cancellous autograft to the defect, and in the absence of infection we can expect uncomplicated healing. We consider a defect not significant when the bone can be shortened to bring the ends into direct apposition. Such cases, once infection is controlled, are relatively easy to manage. The significant defect involves the long bones in which over an inch-and-a-half of bone is missing between the major fragments. These significant defects are not likely to be bridged by a shortening procedure alone.

Table 1 shows the distribution and incidence of the bony defects in our series of 86 patients. Thirty are classified as significant. The details of 3 cases are presented to illustrate some of the problems encountered.

TABLE I: Incidence of Segmental Defects of Long Bones

Bone	Defects	Significant Defects
Humerus	14	7
Ulna	18	4
Radius	16	3
Femur	12	7
Tibia	16	9
Fibula	10	0
Total	86	30

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* Read at the Trauma Seminar, Brooke Army Medical Center, Fort Sam Houston, Texas, March 3-6, 1969.

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The opinions or assertions contained herein are the private ones of the authors and are not to be construed as official or reflecting the views of the Navy Department or the naval service at large.

Report of Cases

Case 1. A 24-year-old white Marine sergeant had a 3-inch segmental defect of the left tibia resulting from a high velocity bullet from an enemy rifle in August 1967. He arrived at Bethesda 3 days after injury with cleanly debrided open wounds and with the major fragments immobilized with Steinman pins incorporated into the plaster cast. Subsequent wound care and split thickness skin-grafting resulted in healing of soft tissues with good skin coverage and without evidence of infection. Length was maintained by continued skeletal pin fixation in plaster casts.

In January 1968, 5 months post-injury, the McMaster method[1] of cross-peg grafting between the tibia and fibula proximally and distally was used. Freeze-dried cortical homograft pegs were used. These were supplemented with cortical homograft fragments. No autograft was used initially.

In August 1968, 8 months after bone-grafting and prolonged immobilization in plaster casts it was clinically and radiologically obvious that union was delayed. Therefore, through an anterolateral approach abundant iliac cancellous autograft was used to pack the defect in the tibia (figure 1).

By January 1969, 5 months after the autogenous grafting, there was clinical, and X-ray evidence of progressive healing. Weight-bearing, with an ischial weigh-bearing brace, was begun.

The patient was retired from the Marine Corps and has enrolled in college. By January 1970, 18 months post-autogenous grafting, and 2½ years after the injury the tibial defect was solidly healed and the patient was able to discard his brace.

Case 2. A 34-year-old white Marine major sustained a severely comminuted open fracture of the right tibia and right fibula due to a land mine explosion in Viet Nam in June 1966. Initial surgical debridement was done within an hour of the injury. Subsequent debridements resulted in a segmental defect of 4 inches in the tibia.

Because of 3 factors: the absence of infection, no injury distally, and no neurovascular deficit, amputation was deferred and reconstruction was undertaken. Early in the course of management open reduction with internal fixation of the fibula with an intramedullary Rush rod was used to maintain length while the soft tissue was healing.

In December 1966 bone-grafting to bridge the defect was attempted with freeze-dried cortical femoral homograft supplemented by iliac autograft. The amount of bone which could be added and still effect skin closure was limited.

Postoperatively there was no infection and the wounds healed primarily. A long leg-plaster cast without weight-bearing was used for immobilization.

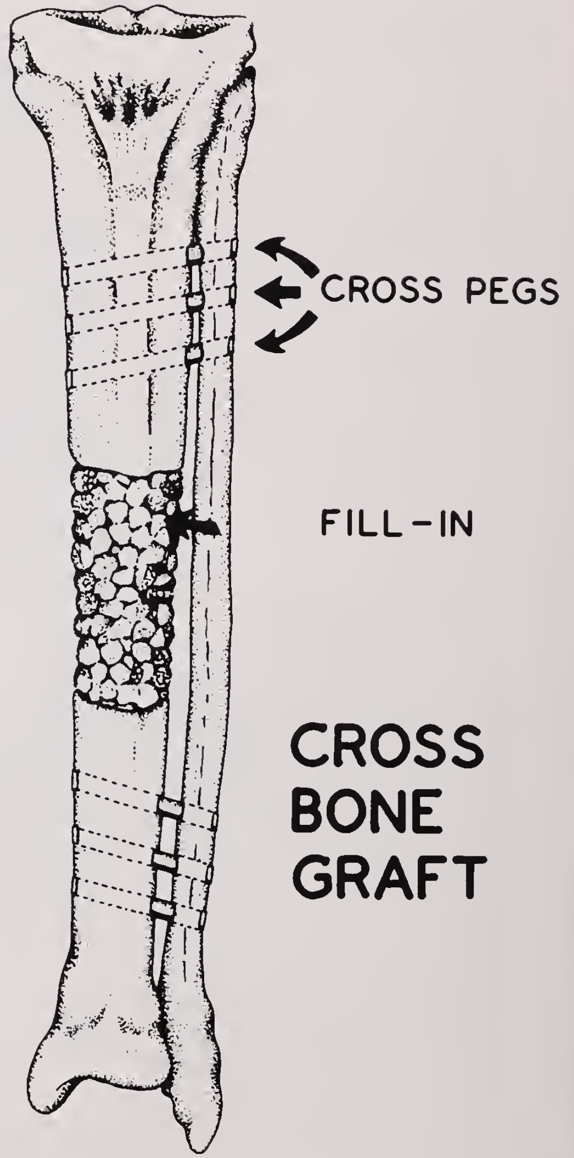


FIG. 1 Preferred method for bridging tibial defects (a modification after McMaster and Hohl).

Because of lack of adequate strength in the tibial freeze-dried graft a posterolateral approach was made in October 1967 and a large amount of iliac cancellous autograft was inserted between the tibia and the fibula above and below the defect in an effort to produce a synostosis.

In April 1968, 6 months after the 2nd bone graft, an ischial weight-bearing brace was prescribed. However, in September 1968 after the patient had been wearing the brace for 4 months, pain, heat, and swelling developed over the middle of the tibial defect anteriorly, and a fracture through the cortical graft was noted. Hemorrhagic fluid in small amounts drained through a skin bleb which appeared anteriorly. Repeated cultures of the fluid were negative for bacterial growth.

The drainage persisted and, in January 1969 following injection of methylene blue, the sinus tract was totally excised, along with an inch of the avascular cortical homograft which had fractured. The wound was closed primarily and healed uneventfully. Our optimism to proceed in this case was encouraged by the continued absence of infection.

In March 1969, after arteriograms showed that the 3 divisions of the popliteal artery were viable, a McMaster type procedure was performed with cross-peg grafting with the use of iliac autograft between the distal fibula and the distal portion of the tibia. Exploration of the previous bone graft between the proximal fibula and proximal tibia revealed a solid sheet of bone across to the tibia, but not distally, with increased size of the fibula shaft.

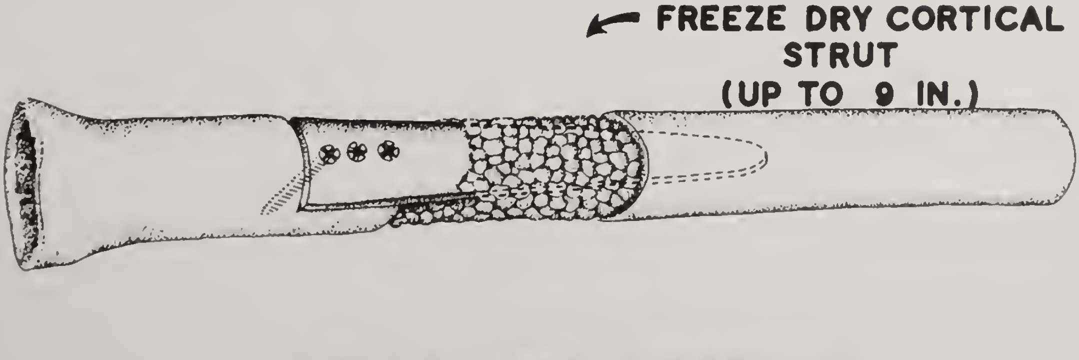
By September 1969 oblique X-ray films of the right leg showed that a good union of the distal, but not proximal, cross-pegging was occurring. The cast was removed and the patient was permitted to regain some knee and ankle motion. When he developed 90° of knee motion a 4th bone-grafting procedure was undertaken in September 1969. Reinforcement of the cross-peg bone-grafting between the proximal tibia and the proximal fibula was done, but in addition, the proximal tibiofibular joint was fused using 2 cancellous bone screws for added internal fixation to prevent rotation between the proximal tibia and the fibula. Cancellous iliac autograft was again used.

By February 1970, 33 months after the injury, healing was sufficient so that an ischial bearing-brace could be used. We hope that functional use of his leg will finally be a reality within the next few months. At no time did this patient want an amputation, even though the option was given to him on more than 1 occasion. He has spent more than 18 of these 33 months outside of the hospital on limited active duty. His sensation, motor power, and circulation have remained intact. His knee-joint function seems to be adequate. The ankle joint and subtalar joints have limited motion and probably always will.

Case 3. A 21-year-old white Navy hospital corpsman was wounded in the left thigh by enemy rifle fire in Viet Nam in April 1966. He arrived at Bethesda with clean open wounds 6 days after the injury.

Healing of soft tissues aided by split thickness skingrafting occurred without evidence of infection. A bony defect of 3½ inches persisted.

In August 1966, 4 months after the injury, bone-grafting to bridge the defect was undertaken with an 8-inch strut of freeze-dried homogenous cortical bone supplemented by iliac cancellous autograft. The proximal portion was affixed to the proximal fragment with bone screws, and the distal end of the graft was driven into the distal femoral fragment for a distance of 3 inches (figure 2). Hip spica cast followed by balanced suspension immobilization was used for 9 months, after which an ischial weight-bearing brace was used. At this point the patient was discharged from the Navy and all bracing was discontinued. At follow-up, 33 months after the injury, solid union was shown. The patient had only 75° of knee flexion and with shortening of 1 inch of femur at the end of this time.



FREEZE DRY CORTICAL (FOR LARGER DEFECTS....)

FIG. 2 Preferred method for bridging femoral defects.

Results

The results expressed in table 2 as good, satisfactory, poor, or failure are arbitrary because the pattern of injury and the number of cases are too few for statistical analysis.

TABLE 2: Results According to Bone Involved

Bone	Results Good	Satisfactory	Poor	Failure
1. Upper Extremity				
Humerus (7)	2	3	2	0
Ulna (4)	2	1	1	0
Radius (3)	1	1	1	0
Total (14)	5	5	4	0
2. Lower Extremity				
Femur (7)	2	2	2	1
Tibia (9)	2	2	2	3
Total (16)	4	4	4	4

Good results are those in which bone continuity is restored and functional recovery is sufficient to permit the patient to be brace-free.

Satisfactory results are those in which bone continuity is restored but function of the treated limb is limited by the necessity of a brace.

Poor results are those in which full restoration of the bony continuity has not been achieved or its strength is too precarious and uncertain for the patient to be brace-free.

Failures are absolute in that amputations were required to control infection. Function may be better in the failure group than in some patients classified as having a poor result.

Because of the prolonged period necessary for architectural remodeling of bone some of the poor results may yet improve. They may require additional bone-grafting and may become satisfactory. All of the cases herein reported have been followed up for a minimum of 1 year following bone-grafting. The end-result in 1 case (Case 2) after years may not be known for another year or more.

The failures were in patients who had femoral or tibial bone defects. This result correlates with the lower amputation rates in patients sustaining upper-extremity vascular injuries in comparison with those involving arterial injuries in lower extremities and suggests that there may be a correlation with good collateral circulation in the upper extremity.

Discussion

A number of methods are available for the bridging of such segmental defects of long bones.[1,2] We have employed several of them. Some well-established principles[3,4] which are equally applicable to non-combat wounds will be emphasized.

A. *Early management.* Meticulous debridement and early skin cover for exposed bone are both requisite to eliminate infection. If delayed primary closure can be accomplished between the 5th and 7th days following initial debridement, the patient has the best chance for later reconstructive bone surgery. The split-thickness mesh-graft has been employed early for skin coverage and may be used as early as at the time of the delayed primary closure. Non-viable bone fragments must be removed.

B. *Immobilization.* Internal fixation of bone in a fresh war wound is rarely if ever indicated for immobilization. Later, with infection controlled we recommend internal fixation if necessary to stabilize the fragments.[5] However, after initial debridement, transverse Kirschner wires or Steinman pins placed in the fragments above and below the defect may be incorporated within a plaster cast. This is especially indicated in patients who have had repair of vascular injuries associated with fractures.

C. *Associated nerve and vascular injuries.* Will the limb be functional if the bony defect is repaired? If the probability of success of nerve and blood-vessel repair is in doubt, the surgeon should be realistic and decide whether early amputation should be done. Arteriography may be of great importance in deciding between early amputation or a prolonged course of treatment. The circulation may undergo severe stress by the compressive effect of voluminous bone graft. Bounding pulses and excellent venous return without edema are favorable signs. Protective sensation or a strong likelihood of successful nerve repair are also favorable signs to go ahead with bone work. Given the opportunity, the young patient generally prefers a prolonged course of treatment rather than amputation. He knows that amputation is always available as a last resort.

D. *Control of infection.* The control of infection is often difficult. It results when initial debridement has been inadequate. We recommend re-debridement and the use of sinograms followed by the injection of methylene blue into the sinus tract when a persistent draining sinus is present. Repeated debridement may lead to enlargement of the bony defect. Culture of specimens and sensitivity studies are essential to determine the ideal antibiotic to be used. Our most difficult infections to manage have been caused by gram-negative bacilli. We have had less trouble with the ubiquitous *Staphylococcus aureus* than we expected. *Pseudomonas aeruginosa,* although an organism commonly cultured from the battle wounds from Viet Nam, has not been a severe problem for us.

Often several organisms are identifiable from the same wound. In some instances we have resorted to the use of 0.1 per cent neomycin for our irrigating solution with the closed-suction-irrigation system, being ever aware of its potential nephrotoxic and ototoxic effects. Repeated audiometry and renal function studies are done in patients who are being given neomycin solution.

Our experience with closed suction-irrigation agrees with that of Dilmaghani et al.[6] We have been able to continue such suction irrigation up to 6 weeks with the use of a turbine chest pump. In 1 case we used hyperbaric oxygen up to 3 atmospheres in 60 simulated dives in an attempt to control a *Proteus mirabilis* infection. These were supervised by Captain R. D. Workman and his submarine medical staff of the Naval Medical Research Institute, Bethesda.

E. *When should bone surgery be performed?* If there is no evidence of infection at the end of 3 months, as measured by clinical, laboratory, or X-ray evidence, we attempt definitive bone surgery. The risk of lighting up a dormant infection is recognized. This risk must be weighed against the disadvantages of prolonged immobilization.

Bone surgery in the presence of active infection is hardly an acceptable procedure. However, once we were able to successfully use closed suction irrigation, we have performed bone-grafting procedures in the presence of persistent infection in 4 cases. Two of our failures were from these 4 cases.

F. *Good skin coverage.* Pedicle skin grafts, although time-consuming and uncomfortable for the patient during the immobilization phase, give excellent cover for later surgery to bridge a large bone defect. We have successfully used the McMaster technique in tibial bone defects when the anterior wound was skin-grafted with a split-thickness mesh graft in 3 cases. However, we used closed suction postoperatively in these cases to eliminate the pressure of a hematoma on the mesh graft. When later tendon transfers are to be made in patients with associated nerve injuries, a full-thickness pedicle skin-graft is preferred.

G. *Relationship between the missile and the wound.* Of the primary missiles, the high velocity bullet which enters the body in the spin phase may be more readily managed in terms of infection because of its high temperature at the time of entry. However, the cavitation effect or the production of secondary missiles that are bone fragments may blast large amounts of soft tissue away through a gaping exit wound. Mortar, land mine, or artillary fragments produce jagged wounds which may be contaminated by the entry of bits of clothing. Often these punctate wounds are so numerous that the surgeon may have difficulty in determining the extent of debridement necessary. In general, we have noted few problems with high velocity missile wounds received at near range. On the other hand, at far range the high velocity missile may tumble or yaw by the time of impact and its effect may be more destructive.

H. *Type of bone graft.* In our opinion there is no question about the superiority of cancellous autograft over all other types of bone grafts in terms of rapidity of healing. At times, however, a rigid cortical strut may be needed. We have used freeze-dried cortical bone homograft for stability when there is a large defect. However, we have supplemented with cancellous autograft in all the cases that we have treated successfully.

Summary

We have bridged significant segmental defects in open fractures of long bones in 30 patients. Our results indicate that success may be attained when: (1) the distal anatomic parts are functionally intact, (2) good skin coverage is present, (3) infection is controlled, (4) circulation is adequate, (5) abundant cancellous autograft used, although supplemented at times with freeze-dried homograft, and (6) immobilization of the fracture continued until healing is complete.

Eight major factors involved in our experience have been discussed. The fine art is knowing when and when not to embark upon a prolonged course of treatment, as exemplified by the 3 cases presented.

Acknowledgment

The authors acknowledge technical editing by Frances H. Atkinson, BA, RRL.

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Acute Acalculous Cholecystitis After Trauma and Surgery

CAPTAIN THEODORE H. WILSON, JR., MC, USN*

SURGEONS HAVE OBSERVED that acute cholecystitis may occur after abdominal or pelvic surgery which has nothing to do with the biliary tract, and even after operations which are totally extra-abdominal. In the former circumstance the subsequent development of cholecystitis might be attributed to rough manipulation of the gallbladder in a search for stones or in an effort to demonstrate the ability of the gallbladder to empty, but in the latter another explanation is needed. It has been postulated that the postoperative patient may be dehydrated and that the motility of the biliary apparatus may be reduced by drugs, permitting excessive water resorption from gallbaldder bile which is already concentrated. Further, any duodenal distention with loss of competency of the sphincter of Oddi might permit bacterial migration up the ductal system under conditions of stasis with consequent infection of the gallbladder. It is possible that the microcirculation of the gallbladder wall is irreversibly damaged during hypotensive episodes associated with trauma and surgery, resulting in cellular death. Whatever the cause, the condition develops under circumstances in which the surgeon may not be expecting such a complication, and any symptoms of right upper abdominal or epigastric pain with leukocytosis and fever might be easily attributed to basilar atelectasis, pneumonitis, ileus, gastric distention, or mild pancreatitis. It is entirely possible that mild episodes of cholecystitis are quite common postoperatively or after trauma but subside spontaneously or under therapy aimed at other conditions. In a series of 98 cases reported from the Mayo Clinic[1] several interesting facets of the problem were observed that seemed to distinguish this form of cholecystitis from the ordinary. It occurred 3 times more commonly in men than in women. More than half (53 per cent) were acalculous. The incidence of prior symptoms was low. Free perforation occurred in 12 per cent. Abdominal pain was present in only 18 per cent. Abdominal distention was present in 40 per cent, and jaundice was clinically evident in 21 per cent.

Mandelbaum and Palmer[2] reviewed a number of articles that discussed acute cholecystitis following non-biliary tract surgery but found no references to this condition following trauma. They reported 2 patients who developed acute cholecystitis after severe pelvic injuries. One came to the hospital in shock, was resuscitated, and began oral intake by the third postoperative day only to develop distention and vomiting. Repeated efforts over several weeks' time failed to relieve the distention and emesis more than briefly. The patient complained of epigastric pain and fullness. A gastrointestinal X-ray series was negative. After repeated oral cholecystograms failed to visualize the gallbladder cholecystectomy was performed. The gallbladder was thickened, distended, and gray. It contained thick, white, sterile bile, and revealed focal mucosal necrosis and inflammatory cells in the wall. No stones were present. Recovery was prompt. The second patient also had a fractured pelvis, came to the hospital in shock, was resuscitated, and progressed rapidly to an oral intake. On the 12th day he developed severe right upper quadrant abdominal pain, local tenderness, fever, and leukocytosis. An intravenous cholecystogram and cholangiogram failed to opacify the gallbladder. Cholecystectomy the next day removed a large, tense, focally gangrenous gallbladder with severe edema and with no stones. Recovery was rapid. Shaw[3] reported 6 proven and 2 suspected cases of acute cholecystitis in severely injured young men, aged 20 to 23 years. The average time from injury to recognition of cholecystitis was 63 days, the range being from 14 to 166 days. Of the 8, only 4 had had a laparotomy prior to the onset of cholecystitis. One was found to have an organizing thrombus occluding the cystic artery, with acute gangrenous cholecystitis and perforation. The author thought that dehydration, drugs, and the fasting state contributed to the development of cholecystitis, and pointed out that the cholecystokinin mechanism, which promotes bile flow, is inactive during fasting.

At the Naval Hospital, Bethesda, 8 examples of this entity have been observed, all under conditions which made the diagnosis difficult to establish and which made the necessary anesthesia and surgery hazardous. These cases will be briefly described.

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Report of Cases

J. C., a 37-year-old negro male, was shot in the chest and abdomen on January 18, 1969. After insertion of a chest tube and laparotomy with repair of numerous small and large bowel perforations at another hospital he developed peritonitis and pneumonia, followed by a wound dehiscence. He was transferred to the Naval Hospital, Bethesda, in a septic state 9 days after injury. He developed bleeding from stress ulcers and on February 20, 1969 underwent vagotomy, pyloroplasty, exteriorization of a leaking ileocecal perforation, and drainage of multiple abscesses. On February 22 because of further bleeding a large gastrotomy was done with oversewing of numerous shallow stress ulcers. On March 5 because of persistent sepsis and evidence of peritonitis laparotomy was again performed. Both the pyloroplasty and gastrotomy were leaking. The gallbladder was gangrenous and was removed. The leaking areas were repaired. The pathologist reported necrotic, acalculous cholecystitis. Renal failure and coma ensued and the patient died on March 12, 1969.

J. S., a 67-year-old white man, underwent a Soave procedure on February 6, 1969 for a large annular villous adenoma of the rectum. Necrosis of the distal portion of the bowel which had been pulled through the muscular rectal sleeve necessitated an end colostomy and closure of the rectal segment. High-output renal failure and respiratory decompensation ensued, and a tracheostomy was performed. The abdominal wound dehisced and was repaired on February 20. Five days later the patient had a massive gastrointestinal hemorrhage responding to iced saline lavage and transfusions but followed by pneumonia and oliguria. On March 3 a massive bleeding episode required vagotomy, pyloroplasty, and oversewing of a bleeding duodenal ulcer. The gallbladder at the time was tense but otherwise normal. Four days later another bleeding episode was controlled by oversewing numerous shallow gastric stress ulcers. Two days later the patient bled massively again and died on the operating table. At this time a necrotic, greatly distended gallbladder was removed. It contained no stones. Microscopic examination revealed acute and chronic inflammatory-cell infiltration of all layers and extensive necrosis of the muscular and mucosal layers.

H. M., a 52-year-old man, suffered a gunshot wound of the abdomen on March 7, 1969. Colonic wounds were closed at another hospital. The postoperative course was septic, with peritonitis and a fecal fistula. Thirteen days after the injury the patient was transferred in poor condition to the Naval Hospital, Bethesda. On March 21 a laparotomy was done in an effort to drain intra-abdominal abscesses and to divert the fecal stream from the fistula. Acute gangrenous cholecystitis with free perforation and bile peritonitis was discovered, as well as omental and left subphrenic abscesses. The gallbladder was removed, the fecal stream was diverted with a colostomy, and the abscesses were drained. The patient subsequently developed severe pulmonary problems requiring tracheostomy. He bled from the stress ulcers. Renal failure developed and he died on March 26. The pathologist described acute gangrenous acalculous cholecystitis with ulcerated mucosa and extensive wall necrosis.

G. H., a 20-year-old Marine, suffered extensive wounds as the result of a "booby trap" explosion on March 28, 1969. He was in profound shock and required massive transfusion therapy. At his initial operation he was found to have a destroyed cauda equina, massive deep buttock wounds with a rectal injury, flank wounds with an exposed left kidney, traumatic amputation of the right leg at high thigh level, and a chest wound requiring a chest tube and tracheostomy. After a very difficult course he arrived at the Naval Hospital, Bethesda on April 27, 1969. He was septic, and feces drained from his left flank wound. He needed a diverting colostomy and at laparotomy he was found to have an unsuspected acute cholecystitis with a small area of gangrene through which bile had leaked. Because of his very poor condition a cholecystostomy and a colostomy were done. He improved temporarily, but gastrointestinal bleeding and sepsis developed. On May 21 a laparotomy was done and bile peritonitis was discovered. The necrotic gallbladder was removed. Two days later he died. The pathologist reported acalculous cholecystitis.

L. G., a 65-year-old white woman, underwent an aorto-iliac bifurcation by-pass graft for occlusive disease on January 20, 1970. Promptly after surgery she began to have unexplained fever and repeated bouts of abdominal distention, nausea, and vomiting requiring intubation and suction. Twenty years earlier she had had a questionable bout of gallbladder disease. The abdominal signs and symptoms were difficult to assess. On February 21 a laparotomy was done, and a distended, gangrenous gallbladder was found. A cholecystostomy was done. No stones were identified. The patient did not improve but remained febrile. Renal failure developed, necessitating repeated hemodialyses. On March 6 abdominal exploration was again performed in search of a source of sepsis, but none was found. The gallbladder was shrunken and not abscessed. It was not removed. The clinical course deteriorated further and the patient died on March 30. The gallbladder showed chronic inflammatory changes. There were no stones.

S. S., a 24-year-old white male officer, was crushed between 2 boats in an accident at sea on November 20, 1969. He suffered pelvic, femoral, and metatarsal fractures. On board ship he was supported with transfusions until he could be transferred to a hospital in the Azores. A laparotomy was done and disclosed only massive retroperitoneal hemorrhage. On November 29 he arrived at the Naval Hospital, Bethesda, with a blood urea nitrogen of 150 mg, but with good urine output. Orthopedic management was instituted. Urea nitrogen, serum potassium, and creatinine levels steadily rose. Hypertension developed. Peritoneal dialysis was not effective, and hemodialysis was started. Muscle necrosis about the pelvis and in the thighs eventuated in abscesses which required drainage. In January 1970 the right leg suddenly became very swollen. This, coupled with the septic state, suggested an infected thrombus in the right iliac vein. A phlebogram seemed to establish this diagnosis. A laparatomy was done on January 8, 1970 and the right external iliac vein felt thickened. The vena cava was ligated. The gallbladder, quite unexpectedly, was found to be thick-walled, distended, and gangrenous. It was removed. The pathologist described acute gangrenous acalculous cholecystitis. The clinical course improved. The kidneys began to function. The patient began to eat and gain weight. However, he once more succumbed to infection, this time with a yeast septicemia, and died on February 24, 1970.

W.K., a 19-year-old white Marine, suffered a gunshot wound of the abdomen on July 15, 1969. Laparotomy revealed multiple holes in the small bowel and extensive damage in the right half of the colon. A right colectomy and 3 small bowel resections with anastomosis were done. There was much destruction of the right rectus muscle. The patient arrived at the Naval Hospital, Bethesda, August 3 with a small-bowel fistula and vague tenderness in the upper abdomen. He had a septic course, and on August 10 a large infected hematoma in the right lower abdomen was drained. He continued to be febrile and became jaundiced. An intravenous cholangiogram revealed questionable gallstones. On August 21, 2 small bowel fistulas were resected. The gallbladder was found to be thick and inflamed. It contained no stones. It was removed. The patient steadily improved and was discharged from the hospital. The pathologist described chronic acalculous cholecystitis.

E.J., a 44-year-old nurse, was hospitalized in Puerto Rico on August 27, 1969 because of abdominal pain. A tentative diagnosis of cholecystitis was made and the patient responded to symptomatic therapy. Just prior to discharge she developed a severe earache and headache which unexpectedly progressed to seizures and coma and a left hemiparesis. Burr holes revealed edematous brain. Dilantin®, steroids, and antibiotics produced improvement but 1 of the burr holes became infected with staphylococcus, and a local abscess and underlying cerebritis developed. This cleared with time and drainage. While still in a disoriented, febrile state the patient seemed to complain of abdominal distress, and examination suggested an acute process in the right upper abdomen. Laparotomy revealed an acutely inflamed acalculous cholecystitis, and the gallbladder was removed. The patient subsequently made a good recovery. The pathologist reported both acute and chronic cholecystitis.

Summary

Eight cases have been described to illustrate the fact that acute acalculous cholecystitis, often with frank necrosis of the mucosal lining or the wall, may develop postoperatively or after trauma under circumstances that make diagnosis difficult and treatment hazardous. In some situations the removal of the diseased gallbladder may be of distinct benefit to the patient, while in others the morbid processes are so severe that cholecystectomy alone cannot change the ultimate outcome. Cholecystostomy would appear to be an inadequate operation if the necrotizing process has involved more than the small amount of wall one would turn in about the catheter, since subsequent leakage would be highly probable.

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The Liver in Graves' Disease

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THAT DERANGED HEPATIC MORPHOLOGY and function occur in patients with Graves' disease is well established. Early studies based on necropsy findings showed marked inflammation, fatty infiltration, necrosis, and cirrhosis.[1, 2] More recent investigations based on liver biopsy specimens describe only mild and nonspecific alterations in patients with uncomplicated Graves' disease. Dooner and associates[3] studied the liver biopsy specimens of 15 cases of hyperthyroidism and reported the following histologic alterations in the liver: cytoplasmic vacuolization (5 cases), absent nuclei (6 cases), pleomorphic nuclei (5 cases), hyperchromatic nuclei (6 cases), steatosis (3 cases), round-cell infiltration (10 cases), increase in portal connective tissue (5 cases), and engorgement of the central vein (4 cases). Similar changes have been found by others.[4, 5] Electron microscopic studies to date have also shown the nonspecific changes of ergastoplasmic vacuolization, disappearance of ribosomes, swelling and increased density of the mitochondria, and condensation of the cytoplasm under the cell membrane.[6]

No characteristic abnormal pattern of liver function tests has been observed. Abnormalities reported are increased bromsulphthalein (BSP) retention, increased bilirubin, decreased albumin, prolonged prothrombin time, and abnormal cephalin flocculation.[7] Recently significant increases in the serum alkaline phosphatase, serum glutamic oxalacetic transaminase (SGOT), and serum glutamic pyruvate transaminase (SGPT) were reported in a group of hyperthyroid patients.[8]

After evaluation of 2 patients with Graves' disease who had abnormal liver function and abnormal liver biopsy specimens, we were stimulated to study retrospectively the clinical records of our other patients with Graves' disease in an attempt to ascertain the frequency and possible significance of associated liver abnormalities. The results are reported here.

Methods

Pertinent data from the available (and coded, for indexing diseases) clinical records of the patients with Graves' disease who were seen between 1965 and 1969 at the Naval Hospital, Bethesda were abstracted. In each case the diagnosis of Graves' disease had been confirmed by 1 or more of the following thyroid function studies: measurements of the protein-bound iodine (PBI); serum thyroxine (T_4), measured by competitive binding analysis; tri-iodothyronine (T_3) absorption with resin or charcoal; radioiodine (RAI) uptake; and RAI or pertechnetate scan.

As an initial screening, the records were assembled of the patients for whom at least 1 liver function test was done. The records were appraised of those patients who had at least 1 recorded abnormal value. From these was selected a study group whose liver function studies were performed in accordance with the following criteria:

1. Only tests falling above the 95 per cent confidence level were considered abnormal.
2. The patient had to have at least 1 abnormal liver function test performed prior to treatment of his hyperthyroidism with thiocarbamide drugs.
3. If only a single liver function test was found abnormal (e. g., bilirubin or alkaline phosphatase), verification of the abnormal value by a second test was required, although it was acceptable for the test to have been repeated after the beginning of therapy with thiocarbamide drugs.
4. The case was not included if the patient had an additional disease or procedure that might be associated with abnormal liver function tests.
5. Cases of recurrent hyperthyroidism were included.

Results

The records of 137 patients (54 outpatient and 83 inpatient) were coded and available for review. However, only 62 (9 outpatients and 53 inpatients) had liver function studies performed. In 12 of these they were done following the beginning of therapy. All but 2 of this group had more than 1 liver function test performed. One patient had a twice-repeated elevation of the alkaline phosphatase while receiving methimazole therapy, and 1 had a single elevated SGOT. All of the others were within normal limits.

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The liver function studies were completed prior to the administration of thiocarbamide drugs in 50 patients. All but 3 had more than 1 liver function test performed. Thirteen had significantly (at the 95 per cent confidence level) liver chemistry values, but 4 were excluded from the study group because their liver chemistries were not performed in accordance with the foregoing criteria. One had an abnormal bilirubin and alkaline phosphatase but also had diabetes mellitus; 1 had an elevated alkaline phosphatase but was also suspected of having Paget's disease; 1 had only a single elevated alkaline phosphatase value; and 1 had elevated alkaline phosphatase levels only during a calcium infusion test.

The liver function studies of 9 patients were done to the best of our determination according to the foregoing standards. The studies of these 9 patients are summarized in table 1. Five had elevations of alkaline phosphatase, although in 2 of them this was the only test done. The total serum bilirubin was above the normal range in the first 5 cases on admission but above the 95 per cent confidence level in only 1. In case 3 the bilirubin later rose to a higher level at the 95 per cent confidence level. The SGOT was normal in all patients on admission but became abnormal after therapy in 1 case (case 5). The 3 patients who had BSP tests done had abnormal values. Two of these patients (cases 1 and 2) had liver biopsies performed. The specimens showed the abnormalities described in the case summaries. Cases 1 through 5 follow.

Report of Cases

Case 1. A 41-year-old man was admitted on September 6, 1966 with swelling of the neck, nervousness, polyphagia, heat intolerance, increased sweating, weakness, loss of libido, and a 40-pound weight loss which developed gradually over the previous 2 years. He denied drinking alcoholic beverages. He was a thin, diaphoretic, cachetic man with generalized wasting of muscle. There were lid lag, decreased convergence, intention tremor, and exaggerated deep tendon reflexes. The thyroid gland was diffusely enlarged (60 to 70 gm.). The apical rate was 120 per minute with a radial pulse of 80 per minute. The liver edge was palpable 7 cm, below the right costal margin and was non-tender. A grade II/VI systolic murmur was heard along the left sternal border. At a 45-degree angle the neck veins were distended and the hepatojugular reflux was positive. Skin changes consistent with pretibial myxedema were present. Hertel exophthalmometric measurements were normal. Thyroid function studies are listed in table 1. Liver function studies showed a bilirubin of 1.2 mg/100 ml., an alkaline phosphatase of 5.46 Bessey-Lowry

TABLE 1: Patients with Graves' Disease with Abnormal Liver Function Tests

			Liver function studies on admission								
Patient no.	Age	Sex	Bilirubin (total)	Alkaline phosphatase	SGOT	SGPT	BSP	PBI	T_3	24-hour ^{131}I uptake	T_4
(Normal range)			0.2–1.0 mg/100 ml	0.8–2.3* 4.0–17.0†	15–40‡	15–40‡	<5%	4–8 µg/ 100 ml	28–45%§ 0.89–1.17‖	15–40%	5.3–13.0 µg/ 100 ml
1	41	M	1.2	5.46*	30	20	19	20	62.2§	60.2	–
2	43	M	1.1	12.5†	20	–	<11	7.5	37.5§	15.4¶	4.1
3	47	F	1.2	14†	30	–	–	15	59.0§	71.6	–
4	24	M	1.62	13†	27	–	18.5	14	1.46‖	81	16.4
5	45	F	1.25	20.5†	45	–	–	–	1.87‖	77.1	23.4
6	27	M	0.5	10.7* **	16	13	–	15	56.4§	56.7	–
7††	26	M	–	4.52*	–	–	–	9.3	–	16.1¶	–
8	16	M	–	3.7**	–	–	–	15.3	33§	82.6	–
9	33	M	<1.0	42†	<40	–	–	11.2	1.14‖	46.7	11.3

Cases 1-5, summaries in text.

* Bessey-Lowry units. † King-Armstrong units. ‡ Reitland-Franklin units. § Expressed as per cent uptake. ‖ Expressed as a ratio (patient: control pool). ¶ After Cytomel (triiodothyronine) 100 µg daily × 7 days. ** Repeat alkaline phosphatase still abnormal following initiation of thiocarbamide treatment. †† Had been previously treated with propylthiouracil and RAI × 2 prior to this admission. Patient had marked exophthalmos.

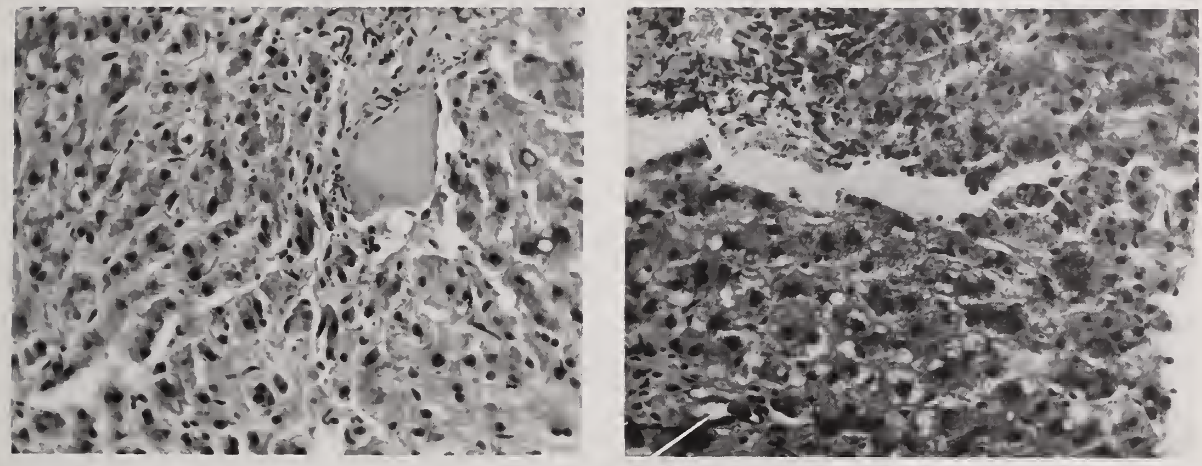

FIG. 1. (A) Liver biopsy specimen (case 1) showing pleomorphic and hyperchromatic hepatic nuclei. One or 2 multinucleated cells are seen. About the central vein is seen some fibrosis. (B) Second liver biopsy specimen (case 1) showing necrosis, disarray of the hepatocytes, and foci of chronic inflammatory cells.

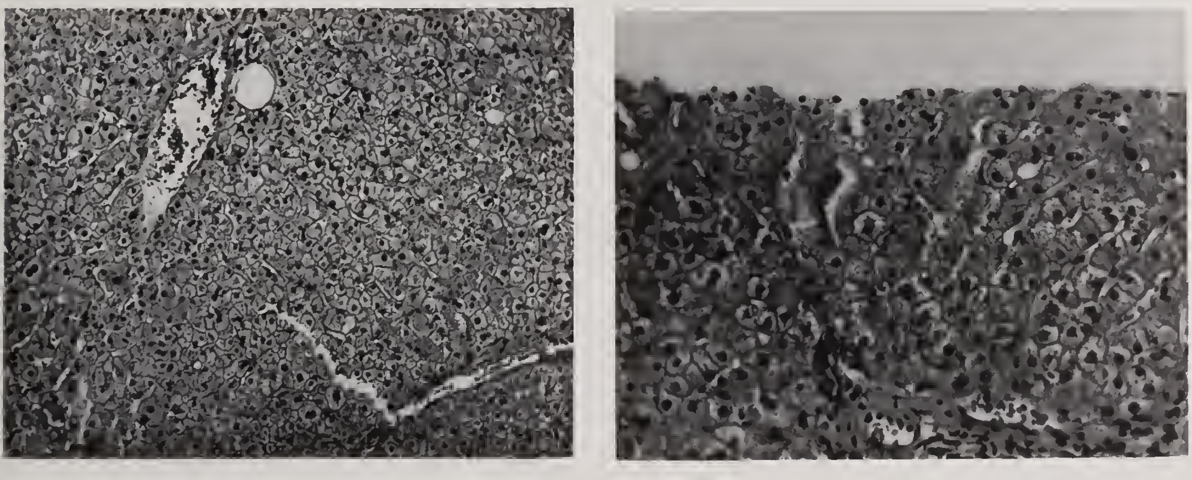

FIG. 2. (A) First liver biopsy specimen (case 2) showing general "unrest" of the lobule, multiple binucleated cells, and areas of necrosis. (B) Second liver biopsy specimen (case 2) showing variation of the hepatocytes, necrosis, and a chronic inflammatory infiltrate.

(B-L) units, a BSP of 19 per cent, and elevated gamma globulin. The chest X-ray film showed cardiomegaly, and the electrocardiogram showed atrial fibrillation.

A liver biopsy specimen on October 29, 1966 disclosed pleomorphic and hyperchromatic hepatic nuclei with an occasional binucleated cell. Mild periportal fibrosis was also present (figure 1A). The patient was treated initially with propylthiouracil, followed by 7 millicuries of radioiodine. Digitalis and quinidine were required to convert his atrial fibrillation to normal sinus rhythm. A repeat liver biopsy specimen on November 22, one month after radioiodine therapy, showed necrosis, disarray of the hepatocytes and foci of chronic inflammatory cells (figure 1B). The alkaline phosphatase values remained elevated in a range of 4.9 to 5.0 B-L units, although values of the other liver function studies returned to normal.

Comment. This patient's abnormal liver function probably resulted from congestive heart failure or nutritional factors or both. However, the elevated alkaline phosphatase values and abnormal histopathology persisted after successful treatment of congestive heart failure and hyperthyroidism.

Case 2. A 43-year-old man was admitted for a periodic physical examination on January 31, 1967. In November 1963 he had had a subtotal thyroidectomy for Graves' disease. One year later hyperthyroidism recurred and he had exophthalmos, pretibial myxedema, and gynecomastia. At that time liver function studies revealed an alkaline phosphatase of 3.8 B-L units. A liver biopsy specimen showed lobular "unrest" secondary to degeneration and regeneration of hepatocytes. There were multiple binucleated liver cells and areas of necrosis (figure 2A). He was treated again with 6.5 microcuries of radioiodine. A second dose of 3.0 microcuries was required 1 year later in 1964 to effect euthyroidism.

On physical examination bilateral proptosis and left periorbital swelling were seen. The skin was indurated in the pretibial area. He was euthyroid, but pretibial myxedema and bilateral proptosis with periorbital swelling were present. There was no goiter nor hepatomegaly.

Laboratory studies revealed a BSP retention of 8 and 11 per cent. All other liver function tests, PBI, and T_3 were normal. RAI uptake was low normal but was non-suppressible by the use of triiodothyronine. Urinary acidic mucopolysaccharides were elevated. Long acting thyroid stimulator (LATS) activity was present in the serum.

A repeat liver biopsy specimen again revealed variation in the size of the hepatocytes and occasional binucleated areas of necrosis were still present and there was a mild chronic lymphocytic inflammatory infiltrate (figure 2B). Biopsy specimen of the pretibial area showed findings consistent with pretibial myxedema.

Comment. The failure of the thyroidal radioiodine uptake to suppress after triiodothyronine, the positive assay for LATS, the acidic mucopolysaccharides, exophthalmos, and pretibial myxedema are indicative in this patient of continued activity of Graves' disease despite euthyroidism. His admitted alcoholic intake was only 1 cocktail daily, and a diagnosis of mild cirrhosis seemed unlikely. Although hyperthyroidism was prolonged, the patient's nutritional status was good. There was no evidence of congestive heart failure. Liver biopsy remained abnormal 20 months after the successful treatment of hyperthyroidism.

Case 3. A 47-year-old woman was admitted on January 30, 1967 with a 3-months' history of nervousness, progressive weight loss of 40 lbs. despite a voracious appetite, dyspnea, and swelling of her ankles. She had an enlarged thyroid gland, sinus tachycardia of 140/minute, and a grade II/IV systolic murmur at the lower left sternal border. In the sitting position the neck veins were distended. The liver and spleen both were palpable. Pretibial and presacral edema was present. Thyroid function studies are listed in table 1.

Liver function studies revealed a bilirubin of 1.2 mg/100 ml, an alkaline phosphatase of 14 King-Armstrong (K-A) units, and an SGOT of 30 units. Subsequently the bilirubin rose to 1.7 mg/100 ml. Alkaline phosphatase and SGOT remained normal.

The patient responded rapidly to treatment with diuretics, plasmaphoresis and propylthiouracil. Later she was treated with radioiodine. Recovery was uneventful.

Comment. Cardiac failure and nutritional deficiencies seemed primarily responsible for this patient's liver dysfunction.

Case 4. A 24-year-old man was admitted with weakness, fatigue, increased appetite, mild weight loss, nervousness, and increased sweating. The thyroid gland was enlarged, and the resting pulse was 120/minute. Thyroid function studies are listed in table 1.

On admission total bilirubin was 1.62 mg/100 ml., alkaline phosphatase 13.0 K-A units, and SGOT 27 units. Subsequently the bilirubin rose to 2.1 mg./100 ml. BSP retention was 18.5 per cent after 45 minutes. Other liver function studies remained normal. The patient was treated with propylthiouracil and then underwent subtotal thyroidectomy. One month after operation the bilirubin had fallen to 1.1 mg./100 ml., and the alkaline phosphatase was 17 K-A units. Recovery was uneventful.

Comment. This patient had uncomplicated hyperthyroidism, did not consume alcoholic beverages, and had no evidence of malnutrition nor of familial hyperbilirubinemia.

Case 5. A 45-year-old woman was admitted because of an enlarging thyroid gland, nervousness, palpitation, and fatigue. Physical examination revealed a diffuse goiter. A grade II/VI systolic murmur characteristic of mitral insufficiency was heard at the apex. The pulse was 132/minute and irregular. At 45 degrees the jugular veins were prominent. There was a left ventricular lift.

Thyroid function studies confirmed the presence of hyperthyroidism (table 1). The electrocardiogram revealed atrial fibrillation. The chest X-ray film showed an enlarged left ventricle.

A liver profile revealed an alkaline phosphatase of 20.5 K-A units, a bilirubin of 1.25 mg./100 ml., and an SGOT of 45 units, rising to 75 units.

The patient responded well to treatment with propylthiouracil.

Comment. The liver abnormalities in this patient with underlying rheumatic mitral insufficiency appeared to be related to her congestive heart failure.

Discussion

The results of this study are in keeping with reports by other investigators that hepatic dysfunction is not uncommon in Graves' disease. A number of reasons to explain the liver abnormalities have been advanced. Among these are increased velocity of blood-flow with resulting hepatic vascular congestion,[9] hepatic anoxia,[10] adverse effects of high levels of thyroxine on the liver,[11] inability to meet the nutritional demands of the hypermetabolic state,[12] the presence of associated heart failure,[12] and treatment with propylthiouracil.[13] Although a multiplicity of factors may be operative in a given patient, the theory of relative tissue anoxia may have special merit, and the evidence supporting this concept will therefore be discussed briefly.

Moschowitz[9] has postulated, on the basis of his pathology studies, that in hyperthyroidism liver damage ensues from an increase in the velocity of blood-flow with consequent hepatic vascular congestion. However, Myers et al.[10] utilizing the technique of hepatic-vein catheterization, found that hepatic blood-flow was normal in hyperthyroidism, even in the presence of an increased cardiac output. These authors related the occurrence of liver necrosis to the increased oxygen consumption which occurs in the hyperthyroid state. Since the hepatocytes extract increased amounts of oxygen from the blood, certain areas of the liver, such as the centrizonal regions, suffer from relative anoxia. Recently an increase in red-blood cell levels of 2,3-diphosphoglycerate (2,3-DPG) has been reported in hyperthyroidism.[14] This substance favors the release of oxygen from oxygenated hemoglobin[15] and has been found to be increased in diseases associated with hypoxemia, such as cyanotic heart disease and chronic lung disease.[14] The elevated levels of 2,3-DPG observed in the red cells of patients with hyperthyroidism support the concept that relative tissue anoxia is present in this disease.

In 3 of our patients with hepatic dysfunction congestive heart failure was present. In 2 of these there was associated marked weight loss. The remaining 6 patients had no evidence of cardiac decomposition, and their nutritional status appeared satisfactory. The most commonly recorded abnormality was an elevation in the alkaline phosphatase (6 patients). Although none of our patients had calcium abnormalities or overt bone disease, subtle derangements of bone metabolism could not be excluded. In addition, in a recent study in a group of hyperthyroid patients, elevations of bone-specific alkaline phosphatase were found.[16] In this study it was not possible to correlate the occurrence of liver abnormalities with the clinical severity of the disease or the levels of circulating thyroxine.

Recently a 7S gamma globulin has been found, the long-acting thyroid stimulator (LATS) in the serum of patients with Graves' disease.[17] The significance of this antibody is not completely understood, but it does not necessarily disappear from the serum despite restoration of the euthyroid state. That the associated liver abnormalities might be related to the fact that patients with Graves' disease have enhanced susceptibility to immunological damage[18] forms an attractive hypothesis but lacks experimental or clinical support at this time. Moreover, there is no evidence that the liver abnormalities are related to the presence of pretibial myxedema or exophthalmos. However, the finding of abnormalities of the liver in the patient who had elevated LATS, exophthalmos, and pretibial myxedema 20 months after return of the euthyroid state suggests that a cause other than congestive heart failure, tissue hypoxia, or nutritional factors could have caused the liver changes in this patient. Further study of the liver in Graves' disease, particularly in this type of patient, is warranted.

Summary

A retrospective study of the medical records of 62 patients with Graves' disease was conducted in an attempt to determine the frequency and cause of associated liver abnormalities.

The liver function studies were completed prior to the administration of thiocarbamide drugs in 50 patients. Of these, 9 had abnormalities of liver chemistries in accordance with the criteria of the study. Five had elevations of the alkaline phosphatase. The total serum bilirubin was above the normal range in 5 cases, but above the 95 per cent confidence level in only 2. One had an elevated SGOT. Three patients who had BSP determinations performed had abnormal dye retention. Two patients had serial liver biopsies; the histopathology was similar to that of other reports of patients with hyperthyroidism. Three of the 9 patients with hepatic abnormalities had congestive heart failure.

Possible reasons for liver dysfunction in Graves' disease have been discussed with particular attention to the theory of relative tissue anoxia.

Unexplained was the persistence of abnormal liver histology in 1 patient with exophthalmos, pretibial myxedema, and elevated long-acting thyroid stimulator. Further study of the liver in Graves' disease, particularly in this type of patient, is warranted.

Acknowledgment

To Frances H. Atkinson, B.A., R.R.L. for technical editing.

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(Continued on page 575)

Breast Cancer at Bethesda Naval Hospital

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THE MEDICAL SOCIETY of the District of Columbia has begun a study of breast cancer and its management in the Washington community.[1] In keeping with the spirit of this endeavor the following review is submitted.

Breast nodules are seen with great frequency in the surgical and gynecologic clinics of the Naval Hospital, Bethesda. The obviously cystic masses are aspirated under local anesthesia in the clinic, and if they completely disappear no treatment beyond follow-up examination is required. If the mass does not disappear when the cystic component is emptied or when solid tissue is encountered, open biopsy is performed. Small mobile nodules which are judged to be benign and which are superficial enough to remove under local anesthesia are treated in this manner with hospital admission the morning of surgery and discharge the same day if the frozen section report is benign. The same approach is used with biopsies of suspected fibrocystic disease. In no case is biopsy under local anesthesia done if the lesion is too deeply situated, if the patient fears such a procedure, or if there is a strong suspicion of carcinoma. In such circumstances the possibilities are first thoroughly explained to the patient, who then undergoes general anesthesia, biopsy with frozen section, and mastectomy if indicated. In the occasional situation where, under local anesthesia, unsuspected carcinoma is found or the diagnosis is deferred, the patient is kept hospitalized until a definitive diagnosis is made, generally within 24 hours. The diagnosis is then explained to the patient and her husband and mastectomy is performed. We believe that there is no harm in waiting 2 to 4 days for the mastectomy. It has been our experience that approximately 1 out of 10 breast biopsies will reveal carcinoma.

Mammography has been employed when the size of the breast makes palpation difficult or when diffuse nodularity makes examination unreliable. In some instances this technic is used when the patient remains anxious even after the surgeon has tried to assure her that he feels no suspicious lesions. If the radiologist identifies a questionable area, biopsy is advised.

It has been our practice to perform a classical radical mastectomy with either a Halsted or Stewart type of incision and dissecting from the axilla downward so that lymphatics are divided early in the operation. The mastectomy site is copiously irrigated with saline and provision is made for suction drainage. A primary skin graft to close the wound is used as indicated in the interests of repair without tension. Occasional seromas and wound-edge sloughs are seen.

If the carcinoma was in the subareolar area or in the medial half of the breast, or if the axillary nodes were found to be positive, postoperative irradiation is given. At present no adjunctive chemotherapy is used at the time of mastectomy, and prophylactic oöphorectomy is not advised.

The whole spectrum of recurrent disease is seen in the surgical clinics. Isolated skin metastases are generally irradiated with an ortho-voltage technic. Oöphorectomy is advised when it appears reasonable that such ablative surgery might favorably alter the disease as it appears in either bone or soft tissue. If there should be a good response, especially if it should last 2 or more years, adrenalectomy is recommended with some optimism that remission will again be likely. We are not yet certain as to when to recommend simultaneous oöphorectomy and adrenalectomy. Hypophysectomy has not been used for the control of metastases. We have had some success controlling pleural effusions with nitrogen mustard. We have never advocated pleurectomy for this condition. Bone pain due to metastases has generally been well controlled with local irradiation. It has been our experience that pain may develop before the involved bone shows any radiographic change, and X-ray therapy directed to the area of pain is often very effective. Bone scans may show lesions well before standard X-ray examination. Estrogens and androgens have been used when circumstances warranted, and such therapy has occasionally produced dramatic results. We have a small number of patients with very advanced disease involving both soft tissue and bone who have already undergone ablative therapy or have not been candidates for such therapy and who have responded very well to combined chemotherapy, with methotrexate, thio-TEPA, and prednisone, or combinations that include 5-fluorouracil, as described by Greenspan[2] from the Mt. Sinai Hospital in New York.

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From 1958 through 1969, 238 women underwent their primary treatment for breast cancer at the Naval Hospital, Bethesda. Only 11 were diagnosed and treated in 1958, but the numbers have increased with each succeeding year so that 24 were discovered and treated in 1969. The ages ranged from 27 to 91, with 60 per cent being between 40 and 60. Sixty-five per cent were still actively menstruating or were in the menopause, and 30 per cent were post-menopausal, while 5 per cent had undergone prior oöphorectomy for unrelated reasons. Forty per cent gave a family history of some form of cancer, while 15 per cent knew that some close female relative had had breast cancer. With medical care readily available at little or no cost, 27 per cent of the patients came to biopsy within 2 weeks of the discovery of the breast mass, and a total of 67 per cent were diagnosed by biopsy within 8 weeks. The remaining 33 per cent took longer from the discovery of the mass to biopsy, the delay being attributable to the patient in most circumstances. Ninety-two per cent of the malignant lesions were infiltrating ductal adenocarcinoma. Four "inflammatory" carcinomas were seen, 4 intraductal, 3 Paget's disease of the nipple with underlying cancer, 3 lobular carcinoma in situ, 1 undifferentiated sarcoma, and 2 cystosarcoma phylloides. Thirty-eight per cent had a lesion less than 2.0 cm. in diameter and not involving the nipple or skin, while 9 per cent had advanced disease. More than half of the lesions were in the upper outer quadrant of the breast, with 17 per cent in the upper inner quadrant, and 11 per cent in the lower outer quadrant. Eighty-nine per cent of the patients with breast cancer underwent radical mastectomy, 8 per cent simple mastectomy and 3 per cent simple mastectomy with partial axillary dissection (the lowest nodes). Ninety-two per cent had axillary contents available for analysis, and 41 per cent of these were positive for metastatic disease, whereas only 21 per cent of the entire group were felt to be clinically positive. During the period of this study only 3 males with breast cancer were identified and treated.

Surprisingly, perhaps, for a military hospital, the records of 93 per cent of those who were eligible for a 5-year mortality study were available for review. The overall 5-year survival was 65 per cent. Eighty per cent of those who had negative axillary nodes were alive at the end of 5 years, and 52 per cent of those with positive nodes. Some of these patients, of course, had lesions, and a number of them died later. These figures compare favorably with those reported by Farrow[3] from the Memorial Hospital for Cancer in 1967.

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The Measurement of Serum 11-Hydroxycorticosteroids in the Diagnosis of Adrenal Cortical Disease

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LT. COMMANDER JOHN J. SABOL, MC, USNR,‡ AND LT. COMMANDER
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DISEASES OF ADRENAL CORTICAL FUNCTION are uncommon causes of common clinical disorders. Obesity, mild hypertension, and abnormal glucose tolerance are infrequently due to Cushing's syndrome, and weakness, hypotension, and abnormal serum electrolyte concentrations rarely represent Addison's disease. On the other hand, the gravity of these adrenal disorders, if untreated, makes reliable exclusion of adrenal cortical disease mandatory.

During the past 4 years we have utilized fluorometric measurements of serum 11-hydroxycorticosteroids (11-OHCS) to rapidly exclude or confirm the presence of adrenal cortical dysfunction. More than 3,000 such determinations have been performed in our laboratory, and we have found this technique extremely reliable for clinical work. The procedure requires only 2.0 ml. of serum and can be completed in approximately 1 hour. Of pharmacologic agents commonly in use only spironolactone interferes significantly.[1] Due to an estrogen-induced increase in the concentration of corticosteroid-binding globulin, patients receiving oral contraceptive agents may have elevated serum 11-OHCS levels. However, such patients retain a normal diurnal variation in serum 11-OHCS, and the serum 11-OHCS normally suppresses following dexamethasone.[2] Using highly purified dichloromethane to extract the corticosteroids from serum (or plasma), we have noted no clinically significant interference from cholesterol[3] or the benzoyl alcohol perservative[4] used in some commercial preparations of heparin.

Methods

Analytical methods. Serum 11-hydroxycorticosteroid (11-OHCS) concentrations were measured by the fluorometric method of Mattingly[5] with dichloromethane extraction of serum and the development of fluorescence in sulfuric acid-ethanol. A sodium hydroxide wash[6] was not routinely utilized. Fluorescence was read in an Aminco-Bowman spectrophotofluorometer.

ACTH tests. In the majority of the 75 ACTH tests reported a dose of 40 units of ACTH-gel (Acthar Gel, Armour) was given intramuscularly, and specimens were drawn before and 2, 3, or 4 hours thereafter. Some of the subjects received a 4-hour infusion of 40 units of aqueous ACTH (Acthar, Armour). The 1-hour values were obtained from subjects receiving intravenous ACTH infusions. The subjects represented a heterogeneous group including some normal subjects studied as controls as well as hospitalized patients with suspected Addison's disease.

Overnight dexamethasone suppression tests. A single dose of dexamethasone, 1.0 mg. orally, was administered between 11 p.m. and midnight to 39 subjects. Serum specimens obtained at 8 a.m. the following morning were compared with specimens obtained at 8 a.m. and 4 p.m. on the day before the test. These subjects also represented a heterogeneous group of outpatients and inpatients who had some clinical manifestations which raised the question of a diagnosis of Cushing's syndrome.

Results

The serum 11-OHCS concentrations before and after the administration of ACTH to 75 subjects without adrenal disease are shown in figure 1. The mean (± standard deviation) baseline values were 13.5 ± 7.2 μg/100 ml. In 10 subjects the mean serum 11-OHCS level rose to 33.9 ± 7.5 μg/100 ml. 1 hour following the initiation of an ACTH infusion. For the entire group the mean serum 11-OHCS concentration was 32.1 ± 13.2 μg/100 ml. at 2 hours (16 subjects),

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35.4 ± 13.9 μg/100 ml. at 3 hours (34 subjects), and 35.8 ± 15.8 μg/100 ml. at 4 hours (31 subjects). For contrast, the absence of an increase in the serum 11-OHCS concentration after ACTH in 2 patients with Addison's disease is shown in the lower panel of figure 1.

The diurnal variation in serum 11-OHCS levels and the serum 11-OHCS response to an overnight dexamethasone suppression test in 39 subjects without adrenal disease are shown in figure 2. The mean (± standard deviation) serum 11-OHCS concentration at 8 a.m. was 17.7 ± 5.4 μg/100 ml. and fell to 9.2 ± 2.7 μg/100 ml. at 4 p.m. Following the administration of dexamethasone, 1.0 mg. orally, between 11 p.m. and midnight the 8 a.m. value was suppressed to a mean of 2.8 ± 1.2 μg/100 ml. For comparison, the lack of diurnal variation and absence of normal suppressibility of the serum 11-OHCS levels after dexamethasone in 2 patients with Cushing's syndrome are shown in the lower panel of figure 2.

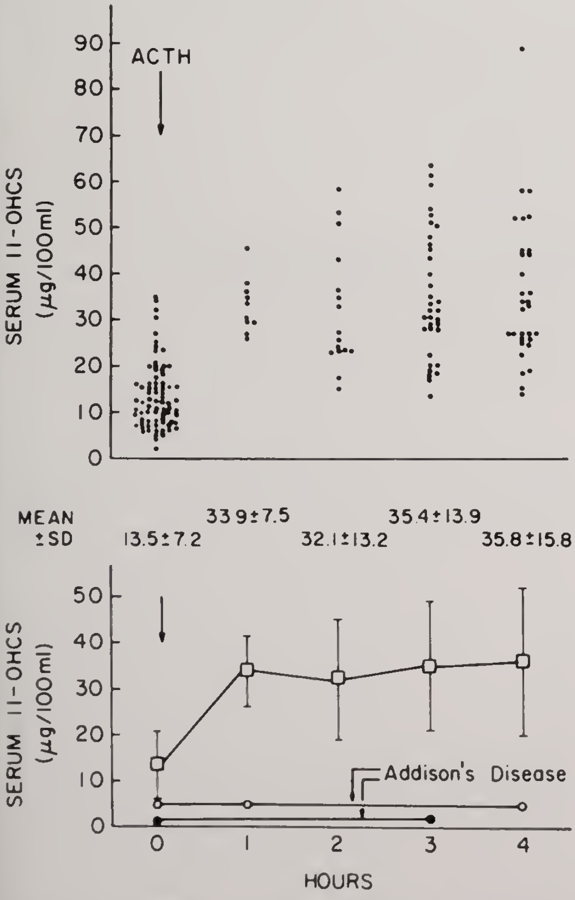

FIG. 1. ACTH tests in 75 subjects without adrenal disease. The individual values for serum 11-OHCS concentrations are shown in upper panel, and mean (±SD) values are shown graphically in lower panel and listed numerically between the 2 panels. The serum 11-OHCS concentrations during ACTH tests performed on 2 patients with primary adrenal cortical insufficiency (Addison's disease) are also shown in lower panel.

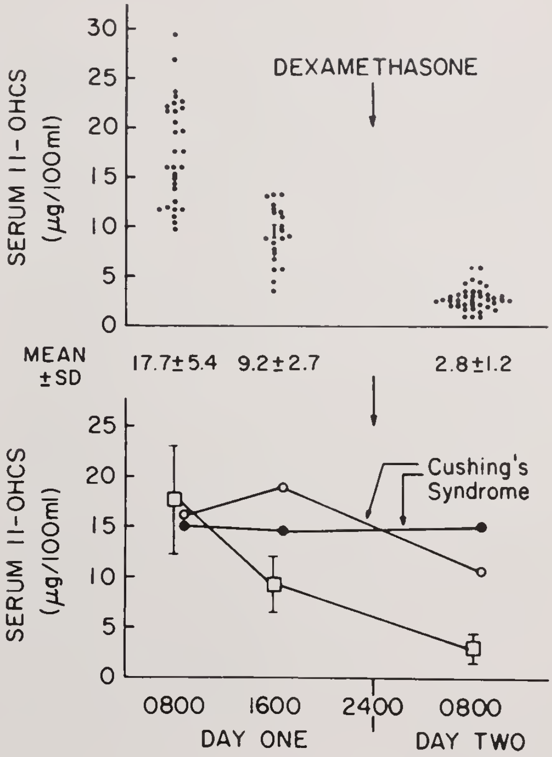

FIG. 2. Diurnal variation and overnight dexamethasone suppression tests in 39 subjects without adrenal disease. Individual values for serum 11-OHCS concentrations are shown in upper panel, and mean (±SD) values are shown graphically in lower panel and listed numerically between the 2 panels. Diurnal 11-OHCS concentrations and levels during overnight dexamethasone suppression tests on 2 patients with adrenal cortical hyperfunction (Cushing's syndrome) are also shown in lower panel.

Discussion

Specific methods for the measurement of cortisol require isotopic or enyzmatic techniques and extensive chromatographic purification. They are time-consuming, require considerable technical expertise, and are not usually available for clinical work. Three less specific but more practical methods for the determination of groups of corticosteroids which include cortisol are currently in use. The classical Porter-Silber phenylhydrazine reaction, which measures 17, 21-dihydroxy-20-keto-corticosteroids (17-hydroxycorticosteroids), was adapted for use in plasma[7] soon after its introduction. This method requires relatively large samples (5.0 ml. of plasma for a single determination), a minimum of 8 hours of incubation, and equipment micro-adapted for reading from a final volume of 0.2 ml. The fluorometric determination of Δ^4-3-keto-11-hydroxycorticosteroids (11-hydroxycorticosteroids), popularized by Mattingly,[5] offers the advantages of sensitivity, rapidity of performance, and relative simplicity, but scrupulous cleanliness of glassware is necessary, and interference by fluorescent drugs, notably spironolactone,[1] is a recognized problem. Furthermore, a small fraction of the fluorescence is due to non-steroidal material (the average figure of 2.5 μg/100 ml. for nonspecific fluorescence quoted by Mattingly is in agreement with our findings).

The more recently developed competitive protein-binding radioassay,[8] employing the principle of displacement of ^{14}C-cortisol from corticosteroid-binding globulin (CBG) by the unlabeled corticosteroids in the serum sample, offers even greater sensitivity and can be performed in a single day with relative simplicity when dextran-coated charcoal is used to separate CBG-bound from unbound corticosteroids.[9] This method is more complex than the fluorometric procedure and requires the appropriate counting equipment, but non-steroidal interference has not been a problem. The occurrence of plasma levels as high as 10.0 μg/100 ml. measured by the latter method after an overnight dexamethasone suppression test[9] is disturbing but is not unique to this method.[10, 11]

All 3 of these methods derive their relative specificity for cortisol from the fact that, of the various corticosteroids measured, cortisol is the predominant species in human serum. For example, the relative fluorescence of corticosterone is 1[6] to 2½[5] times that of cortisol in the fluorometric system, but the ratio of cortisol to corticosterone in normal human plasma is greater than 10 to 1,[12] so that corticosterone makes relatively little contribution to the fluorometric serum 11-OHCS under the usual circumstances.

A single determination of the serum 11-OHCS concentration is not adequate to separate patients with primary adrenal cortical insufficiency (Addison's disease) from subjects without adrenal disease because overlap occurs between the 2 groups. However, measurement of the serum 11-OHCS concentration before and after the administration of adrenocorticotropic hormone (ACTH) does separate Addisonians from normals.[1] The data in figure 1 indicate that in the 10 normal subjects studied an adequate increment in the serum 11-OHCS levels (10.0 μg/100 ml. or more above baseline) occurred within 1 hour of the start of an infusion of 40 units of aqueous ACTH. In contrast, the serum 11-OHCS levels remained unchanged in the patients with Addison's disease.

We prefer the intravenous ACTH test when Addison's disease is strongly suspected and consider this route of ACTH administration mandatory in the presence of hypotension. Since the fluorometric 11-OHCS determination in serum requires approximately 1 hour, the clinical impression of acute adrenal cortical insufficiency can be confirmed or denied in less than 3 hours with the use of this 1-hour intravenous ACTH test. Since neither prednisone nor dexamethasone are measured by this fluorometric technique the patient may be supported with 1 of these corticosteroids, if clinically indicated, during the test.

A 1-hour intramuscular ACTH test, with the use of the aqueous rather than the gel form of ACTH, has been found effective by others[1] and offers convenience, especially in the evaluation of outpatients. The majority of our subjects received ACTH-gel intramuscularly and, as can be seen in figure 1, the mean serum 11-OHCS concentrations were comparable at 2, 3, or 4 hours. We regard an increment in the serum 11-OHCS levels of less than 10.0 μg/100 ml. within 4 hours of the intramuscular administration of ACTH-gel as suspect and as an indication for further study.

Measurement of the morning serum cortisol concentration after the administration of 1.0 mg. of dexamethasone at midnight has become a widely used screening test for the exclusion of a diagnosis of Cushing's syndrome.[9, 10, 11, 13] Indeed, this test has been found to be a better definitive test for the diagnosis of Cushing's syndrome than the measurement of baseline corticosteroids in urine or serum.[14] The results of overnight dexamethasone suppression tests with the use of all 3 of the clinical methods for the measurement of serum cortisol discussed above have been published. A value of 10.0 μg/100 ml. or less at 8 a.m. after dexamethasone 1.0 mg. orally at midnight was accepted as normal by Seidensticker, Folk, Wieland and Hamwi,[11] who used the fluorometric 11-OHCS determination, and by Nugent and Mayes[9] who used the competitive CBG-binding radioassay technique. Nugent, Nichols and Tyler[10] accepted a value of 11.0 μg/100 ml. or less as normal with the colorimetric 17-OHCS (Porter-Silber) reaction. In contrast, Pavlatos, Smilo and Forsham,[13] also using the colorimetric 17-OHCS method, required a suppressed serum value of 5.0 μg/100 ml. or less to exclude Cushing's syndrome on the basis of this test. Our findings, with the fluorometric 11-OHCS technique, are more in agreement with the latter authors. As shown in figure 2, the serum 11-OHCS concentration in all of our 39 normal subjects was suppressed to less than 6.0 μg/100 ml. following the administration of dexamethasone. We, therefore, regard a value over 5.0 μg/100 ml. as an indication for further study and follow-up.

Conclusion

A suspected diagnosis of Addison's disease can be reliably excluded by an increment in the serum cortisol concentration of 10.0 μg/100 ml. or more 1 hour following the intravenous administration of ACTH. The entire procedure can be completed and the diagnosis confirmed or denied in less than 3 hours when the fluorometric method for the determination of serum 11-hydroxycorticosteroids (11-OHCS) is used to measure serum cortisol. Similarly, the fluorometric 11-OHCS concentration can be used in the diagnosis of Cushing's syndrome. A serum 11-OHCS level of 5.0 μg/100 ml. or less at 8 a.m. following the oral administration of dexamethasone 1.0 mg. at midnight reliably excludes a diagnosis of Cushing's syndrome.

Acknowledgments

The authors acknowledge the technical assistance of HM2 P. McCarty, USN, HM3 A. Holcomb, USN, and HM3 P. Vangeloff, USNR.

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Hemostasis in Saphenous Phlebectomy

LT. COMMANDER ANTHONY A. YIAVASIS, MC, USNR*

A NOVEL MANEUVER has recently been introduced in the surgical management of varicosities of the lower extremity.

By tradition, following internal stripping of the greater saphenous system, the first or second assistant applies manual pressure to achieve hemostasis along the entire tract created by the removal of the vein. In the average case pressure is maintained for approximately 5 to 10 minutes, thereby eliminating 1 assistant and stopping further surgery for the moment.

The new technique used involves the attachment of a 2-inch uterine gauze, measuring slightly more than the length of the great saphenous, to the distal end of the internal stripper by means of a heavy silk ligature (preferably no. 5). As the vein is stripped proximally, the uterine gauze is pulled into the tract of the departing vein until it fills it entirely. The stripper containing the vein is then detached, and the gauze remains until closure of the wound is begun. Upon removal of the gauze prior to closure there is little residual bleeding from either the groin or the supramalleolar wound. Milking of the lower extremity also fails to produce clots or any additional bleeding.

Postoperatively at the first dressing change few to no ecchymoses or hematomas are noted along the path of the saphenous system. In a recently conducted survey on several patients who required bilateral stripping, one side was done in the standard fashion with hemostasis via manual compression, while the opposite side was done with the uterine-gauze technique. Again, postoperatively there was a marked decrease in hematoma and ecchymosis formation with a gauze-controlled extremity.

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A Holistic View of Man—Fantasy or Fact?

O. RAY FITZGERALD, PH.D.*

MEDICAL TECHNOLOGY is increasingly making strides in the relief of physical distress and the alleviation of many illnesses. Along with unprecedented progress there are accompanying problems. To see man in his totality of being is difficult, but to see him with a particular malady is far easier.

It is obvious that we are in a communication revolution. But is the man or woman who is being treated in the office or the hospital feeling the positive effects of increased communication potential? In many cases the answer is no.

Specialization in medicine is "in." Oportunities for early clinical diagnosis are unparalleled in medical history. Medications are available which relieve much of the physical suffering. At the same time it becomes more difficult to view man as a whole being. An illness can either temporarily or permanently change the life style of an individual. His view of himself as a person and as a social being can be radically altered by increased dependency, by regression, and by lowered self-esteem—all of which may occur in hospitalization.

The call is not to be fixated on the good old days when the doctor knew not just 1 but up to 3 generations of his patients. The challenge is to find ways to practice the art of medicine after one has developed impeccable skills in the science of medicine.

Your patient, as he views the sophisticated techniques employed in his behalf, may tap out a message as one trapped in the bottom of a tube: "Does anyone know I'm here?" He has 2 alternatives—he can suffer, or he can seek relief. As the attending physician you also have a couple of alternatives. You can function solely as a competent scientist or you can add to the attempts of bridging the communication gap by which your patient has been held prisoner. He is there with all the accompanying anxiety produced by his illness.

There is evidence that something positive is being done in many areas of medical practice today. Examples will be cited as to what is happening today at the National Naval Medical Center, Bethesda, Maryland. The "Health Care Team" concept is being employed in which medical, nursing, paramedical, and ancillary personnel such as Chaplains, dieticians, and physical and occupational therapists have conferences about patient care.

There is always the choice of communicating to (as subject to object), communicating about (as subject about object), or communicating with (as subject to subject). In its first year, a pilot year for the Chaplains Residency Program from June 1969 to June 1970, this third alternative has been tried. Perhaps it is in an unexpected place that this communication process about patient care has been taking place at the initiative of the Chaplaincy Service. Strong support has come from throughout the entire hospital.

Clinical Residents in the Chaplains' Professional Development Program have experienced opportunities to communicate with the physicians and other members of the Health Care Team, with patients, and with families. Rather than taking place at the end of the line on terminal cases this communication 'with' has been from admission to discharge.

Recognizably, there are areas of privileged medical information and privileged professional communication. However, experience has indicated that so much can be gained by good channels of communication. Attending conferences together, providing teaching sessions for each other, and serving as evaluators of the communication have all helped to bring the Healing Team together.

A technique was developed by Chaplain Edward Jayne, a Clinical Resident, in consultation with Doctor Lay Fox, Chief of Medicine, and with Doctor Hector Rivas, Chief of Urology, which has greatly enhanced the communication process. The Miniature Case Conference (or Mini-Conference) brought doctors, nurses, paramedical personnel (hospital-corpsmen), and Chaplains together to focus on the care of Patient A.

In the Mini-Conference the professional identity of one's counterpart and fellow team-member was either affirmed or denied. Following are some of the findings in the Jayne study: There was a gap in the way doctors and chaplains viewed the nurse's role priorities; the nurses and corpsmen best comprehended the role of the chaplains; nurses and chaplains were in agreement as to the doctor's role.

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The deduction from these results is that more homework is needed in communication processes and perceptual images of others if the patient is to derive maximum benefit.

A second technique employed in this Medical Center teaching program is to invite guest presenters to come to another discipline's training group and talk with other professionals about the particular kind of service he or she is rendering in patient care. The internist, the surgeon, the psychiatrist, the tissue-bank doctor, the radiologist, the hospital administrator, and many others are invited to interpret their services to the Chaplain Residents. When you are able to bring your professional jargon into the comprehension of a person not trained in your discipline then good communication can take place.

A third method employed is for a person outside a particular discipline, such as a Chaplain at a cardiopulmonary conference to attend a teaching session which the physicians are conducting. Here he can be a part of the interaction as well as experience the professional disagreements between medicine and surgery as to the treatment plan which is to be adopted.

A fourth method has been to have conferences with the doctor, nurse, family member, and chaplain to discuss progress and prognosis. Here the feel of humanness and concern can come through in a way never possible in the conspiracy of silence fortified by a closed door.

As in much of life, we have been in constant quest of alternatives. A physician recently said to a patient, "We want to be sure that we are treating you and not a test result." Today when depersonalization is a fact and not a fantasy we must find ways to bridge the chasm. Improved patient care will come when some of the cloak of mystery can be unveiled and the identity of the patient as a person is affirmed. If we have the courage we can even let them affirm our identity. Then the holistic view of man will be a fact for us and not a fantasy.

The Liver in Graves Disease–Perlin and Sode

(Continued from page 567)

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Bloody Aspiration and Upper Lobe Infiltrates

Report of a Case

COMMANDER DAVID W. SHEA, MC, USN*

HEMOPTYSIS associated with upper-lobe infiltrates shown on chest X-ray examination is a worrisome clinical problem. In the ambulatory patient aspiration of blood into the upper lobes is not usually considered as a likely and potentially benign cause. The following report describes a patient in whom bloody aspiration was suspected and indicates clinical points helpful in its recognition.

Report of Case

A 50-year-old white female nurse was on duty and well. While eating a piece of hard Christmas candy she began to choke on saliva. Within seconds she began coughing up copious amounts of bright-red blood. Her breath was cut off and she leaned forward, lowering her head below her waist, coughing violently to clear her airway, which she succeeded in doing only after several minutes. A physician who observed the episode estimated that she coughed up half a cup of blood. A few minutes later, on admission, she felt well except for cough productive of blood-streaked sputum, and right lower parasternal discomfort unrelated to respiration.

A chest X-ray film taken during an annual physical examination 2 months before had been normal. The patient smoked 1 pack of cigarettes a day. Three years prior to admission she had had pneumonia in the right middle lobe. She denied having a chronic cough. Results of the physical examination on admission were normal except for scattered fine inspiratory rales over the right upper anterior chest and conjunctival petechiae bilaterally.

On a chest X-ray film (figure 1) upper lobe infiltrates were seen bilaterally. Results of laboratory studies were normal except for an 8 mm. reaction to a histoplasmin skin test. Bronchoscopy and bronchial washings were normal. The patient refused bronchography. The right chest discomfort and cough cleared in a few days. A chest X-ray film on the third hospital day (figure 2) revealed marked clearing of the upper

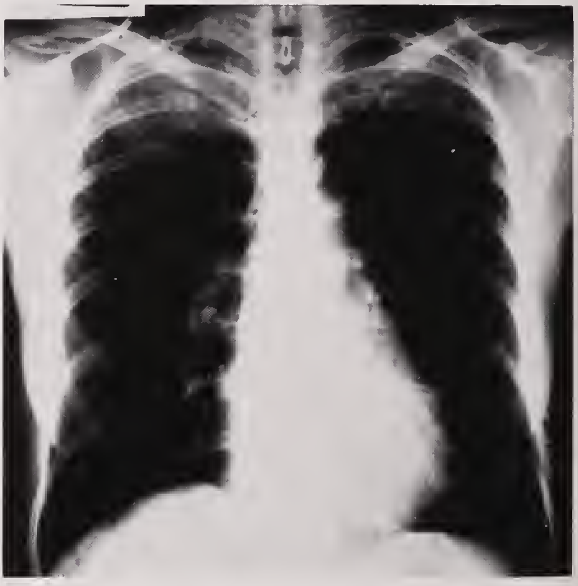

FIG. 1. Posteroanterior view of chest taken on day of admission.

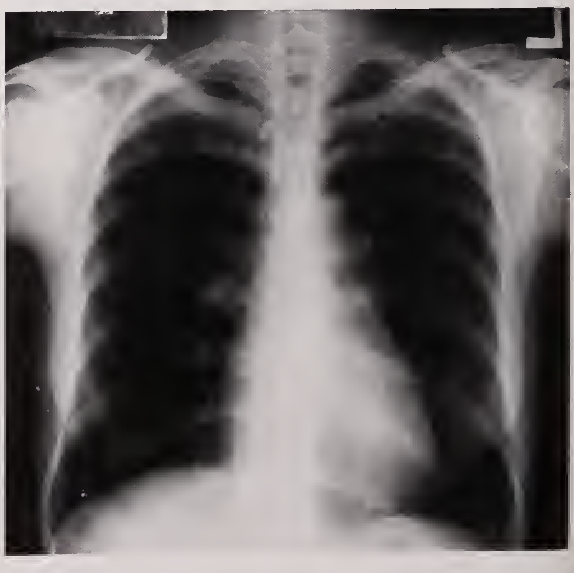

FIG. 2. Posteroanterior view of chest taken on third hospital day.

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lobe infiltrates. On subsequent outpatient follow-up the patient was healthy and had a normal chest X-ray film.

Comment

In view of the clinical course and the clearing of infiltrates on X-ray examination over several days without treatment, it was concluded that the patient had aspirated blood into both upper lobes from a benign focus.

Serious disease is often considered when upper-lobe infiltrates are associated with hemoptysis. An unusual and potentially benign cause of these findings is bloody aspiration. It may be suspected as in this case by obtaining a detailed history of a recent episode of hemoptysis during which the patient had lowered his head below his waist. On physical examination there may be signs of vascular congestion in the head, for example, conjunctival petechiae.[1]

Failure to consider aspiration of blood as the cause of upper lobe infiltrates may delay investigation for primary pathology elsewhere or may lead to inappropriate therapy.

Summary

Aspiration of blood is an unusual and potentially benign cause of upper lobe infiltrates in the ambulatory patient. Failure to recognize this problem may delay investigation for primary pathology elsewhere, or lead to inappropriate therapy. An illustrative case has been presented.

Reference

1. GOODMAN, N.: Differential diagnosis of pulmonary alveolar infiltrates. Amer. Rev. Resp. Dis., 1967, 95, 681.

CORRECTION

In the August 1970 issue of the ANNALS the two electrocardiograms were reversed in the article by Alberto Rotsztain entitled Atrial Flutter Secondary to Digitalis Intoxication (page 426).

President's Page

THE ESTABLISHMENT

For many years I have heard that Organized Medicine has impeded the improvement of health care in the USA. Who is this Establishment?

My very close contact in the past 2 years, as President-elect and President has given me a much clearer answer to this question. I am organized medicine; you, the member of a State Medical Society, are organized medicine. If the so-called organization, the establishment, has failed in any one of its objectives, you and I are to blame.

Why?

The organization is the American Medical Association. Each of us is well represented in this organization—but, few take the time and effort to voice opinions through proper methods. This is true of the same physician in his local medical society, and to extend it further, to his participation in the activities and policies of his local hospital. Many complain, so few actively participate. Attendance at local Society business meetings—approximately 15 per cent; attendance at local hospital quarterly staff meetings—approximately 30 per cent.

I have had the opportunity in the past 2 years, and have taken advantage of this good fortune, to attend the meetings of the House of Delegates of the AMA. Here are represented all state societies through elected representatives. Here Delegates present views of respective constituent areas, some frequently with honest convictions. These views, through resolution and then vote of the entire body become policies of the AMA—to be implemented by the Board of Trustees. The power of the Delegates was well brought out in the June, 1970 meeting of the House of Delegates in Chicago in which they differed with recommendations of the Board of Trustees and so amended these recommendations.

The important point is that you, the State Society member, make your views known to your Society and through them to your Delegates to the AMA meetings. Your individual viewpoint may not always be the endpoint, but if you follow its presentation, you will find that after proper discussion the majority of us in Organized Medicine were granted the opportunity to study and vote on it and so establish policy.

There are physicians who do not wish to think of the AMA as one does a Labor Union—yet we are a Union. A united group of physicians dedicated to the best health care possible for the people of the USA, and also interested in the welfare of the individual physician. It is important that we be honest with ourselves and with our patients—the public. We are vitally interested, dedicated, seriously and totally involved in responsive, responsible efforts to improve the health care received by the American Public; but, we cannot, we will not be pawns of a bureaucratic system that cannot produce this type of care. Our united effort must protect the public and the physician.

You, the individual physician, can help by instructing your Delegates, and through them give Organized Medicine the voice of the practicing physician.

Frank S. Pellegrini

CALORIES / 7 oz. Serving*

Beef Broth	22	Vegetable	68
Consommé	29	Tomato	69
Chicken with Rice	43	Cream of Asparagus	70
Chicken Gumbo	48	Cream of Chicken	76
Chicken Noodle	54	Cream of Mushroom	115
Cream of Potato	58	Green Pea	116
Chicken Vegetable	60	Cream of Shrimp (Frozen)	132
Vegetable Beef	66	Bean with Bacon	133

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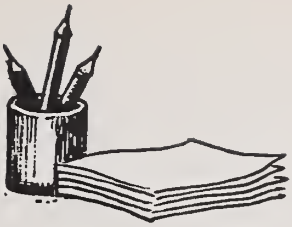
Editorials



Mistaken Diagnosis Not Synonymous with Negligence*

A physician's honest mistake in diagnosis or in judgment as to the course of treatment, although it may delay proper treatment or result in an unnecessary operation, does not give the patient or his family an automatic right to recover damages. In most cases the physician will not be held professionally liable where he can show that he used the customary diagnositc procedures with requisite skill and the degree of care which is ordinary under the circumstances of the particular case, but, nevertheless, arrived at a wrong diagnosis.

A physician or surgeon is not an insurer or guarantor of cure, and where the patient is critically ill and the symptoms are obscure, an unnecessary operation is not synonymous with negligence on the part of the attending physician.

When a physician defends a professional liability suit on the basis of his honest mistake in diagnosis or judgment as to the course of treatment, he is essentially arguing that in his management of the patient he did what other physicians in the community would have done under the same circumstances. He should be prepared to meet allegations that he was not knowledgeable, indecisive, and failed to initiate required diagnostic tests and therapy. His experience and training will be sharply questioned and he can expect to be called upon for an explanation as to why he did not relinquish responsibility for the patient to another physician. In cases where consultation was sought, the physician, of course, would be in a better position to show that the diagnosis was not superficial and that alternative possibilities were carefully eliminated in the treatment of the patient. In the final analysis, the physician must convey the impression that he knew too much rather than too little to avoid liability.

Utilization Committee

This Committee has been engaged in reviewing cases brought to it by Medicaide and Medicare in which questions have been raised regarding physicians' claims. In this space we plan to outline some of the committee's decisions for the information of the Society membership.

1. Question: Visits to Old Age Home. The physician made many visits to the Home each week, seeing many residents on each visit, and had an office in the Home. Visits often totaled several per month on the same resident.

Decision: In a special arrangement such as this, in which the physician spends regular hours in the Home, it does not appear reasonable to consider each patient visit as equivalent to an isolated visit. When more than 3 patients are seen on one visit, perhaps the charge should not be more than that for an office visit.

2. Question: Under Medicaide, the physician charged virtually all visits as extended office visits. Complete physical examinations were performed every 1 to 2 months on some patients.

Decision: After interview by the Committee with the physician it was decided that over-utilisation and excessive charges were evident in this particular instance.

3. Question: Multiple injections, i.e. intra-muscular iron in the elderly.

Decision: Review of charts indicated questionable indications for use of iron in the elderly in the absence of demonstrable blood loss, and even when indicated, oral use is almost always preferable.

Some of these decisions obviously involve medical judgement; This committee (with the concurrence of the President and the President-Elect of the Medical Society) feels strongly that the Society must involve itself in these matters. If questions are to be raised regarding the soundness of certain medical practices as well as the utilization of insured services, then we believe that we in the profession should be making the decisions. If we fail to do so, it is inevitable that inflexible and unacceptable controls will be initiated by the various insurance carriers.

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American Cancer Society Activities*

Professional Education

The American Cancer Society, upon the recommendations of the Professional Education Committee, supports and conducts programs for the continuing education of physicians, dentists, nurses and undergraduates in these various professions.

The Professional Education Committee of the American Cancer Society, District of Columbia Division, Inc. is an active, influential body, composed of representatives from the three area colleges of medicine, two colleges of dentistry, practitioners in all fields of accepted modalities of treatment, nurses, medical and dental students. Under the advice and guidance of this Committee, we present a broad-balanced program for all segments of the medical community. Active liaison is maintained with Medical Societies, Dental Societies, Department of Health Services, Academy of General Practice, and other specialty groups.

More specifically, during the fiscal year 1969-1970, this Division:

(1) actively participated in the Annual Scientific Assembly of the Medical Society of the District of Columbia by displaying an exhibit and providing an honorarium for a speaker on neoplastic diseases;
(2) presented an "Audience Participation" exhibit at the annual Post-Graduate Clinic of the D. C. Dental Society;
(3) offered financial support to 4 medical students, 8 dental students, 2 dental instructors, and 4 nurses to attend workshops at Memorial Hospital for Cancer and Allied Diseases in New York;
(4) presented our entire professional film library to the Medical Audio-Visual Departments at Georgetown, George Washington, and Howard Colleges of Medicine;
(5) presented the same film library to the Regional Medical Program for rotating distribution to all other area hospitals;
(6) made available a supplemental program for the encouragement of performing proctosigmoidoscopy in asymptomatic patients, to include a series of films, appropriate literature and a model depicting colon-rectal abnormalities;
(7) sponsored the St. George Society for medical students and the Oral Cancer Society for dental students to provide supplemental education in all aspects of malignant disease;
(8) mailed to over 1,400 physicians and dentists "CA–A Cancer Journal for Clinicians," published bi-monthly;
(9) published timely articles in leading professional journals;
(10) maintained a complete library of professional literature, available on request to the members of the medical community;
(11) planned and presented an all-day workshop for registered nurses and another for L.P.N.'s;
(12) continued to promote and encourage in-service educational and training programs at all levels;
(13) presented a substantial grant to the Medical Society of the District of Columbia to conduct a Breast Cancer Study;
(14) produced radio and T.V. programs in coöperation with the mass media managers and members of the American Cancer Society.

Plans have been laid to continue all of these programs during the coming year of 1970-1971 and make available to the professional community those activities which will serve the cause of cancer control in prevention, diagnosis and treatment.

Since these activities are planned for continuing professional education, we hope that you will take advantage of them and would welcome your participation in helping to enlarge and improve these programs.

Service to Cancer Patients

As stated in our National Service Manual, "Service is paramount in an organization such as the American Cancer Society," we are, therefore, committed to provide maximum service to cancer patients within the personnel and financial limitations, and by utilizing the resources of all other community agencies.

The philosophy of the Service Committee of the District of Columbia Division is to consider the person—the individual in the highest sense—to focus on his concrete problems with a sincere interest and deep concern. We take into regard the entire scope of psychological, physical, and financial trauma suffered by the patient who has cancer.

The Service program places great emphasis on the information, counseling and referral service.

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*Submitted by the Professional Education and Service Committees of the American Cancer Society D. C. Division, Inc.

With services provided by the District of Columbia Division, and working in close liaison with all other community agencies, no cancer patient should or needs go without care.

To promote this philosphy, the American Cancer Society, District of Columbia, presented a proposal for a special cancer case-finding project to the Executive Board of the Medical Society of the District of Columbia for their consideration and endorsement. This endorsement was forthcoming at the Board's meeting of December 15, 1969. The purpose of the project is three-fold: (1) to locate Cancer patients as soon after diagnosis as possible, and through their physician, make known to them that help is available when needed; (2) to educate the public to sources of help available to them; and (3) to create a greater awareness in the medical community of the patients' needs beyond physical healing.

The success of this project will be dependent on the coöperation of all members of the medical profession in the District of Columbia.

Needs that are met through the American Cancer Society Service Program include dressings, transportation, financial assistance to the Visiting Nurses Association and Homemaker Services, Inc., partial support for care in a nursing home for a limited period, and sick-room equipment for better home care.

Rehabilitation—that process of restoring an individual to a respectable position—is coming into its own for the here-to-for neglected cancer patient. The D. C. Division, recognizing the gap, has a total rehabilitation program for laryngectomies in coöperation with other Metropolitan area Cancer Society Units. Recently, the Reach to Recovery Program for mastectomies was implemented to offer emotional, physical, and cosmetic support to newly operative patients.

Adjustment for colostomy patients is arranged through special training sessions and visitation from other colostomies from the Ostomy Association.

An emergency fund, from a special legacy, covers crisis situations and unusual circumstances when no other source of aid is available in the community.

A grant from the Alexander and Margaret Stewart Trust Fund is administered by the Cancer Aid Plan Committee of the D.C. Division. This allows for limited financial assistance toward hospitalization, professional fees, radiation therapy, and chemotherapy, upon application from the attending physician.

Help us to help your patients. Be receptive and coöperative when the case worker calls you to offer aid. By lending your support early in the fight against cancer, much of the fear and anxiety can be dispelled.

Lead Poisoning

The Environmental Health Committee of the Medical Society of the District of Columbia has recently studied the problem of lead poisoning as it exists in our community. A recent editorial by Dr. Raymond Standard, Director of Public Health for the District of Columbia, in the July issue of the *Medical Annals of the District of Columbia* has emphasized the problem.

In Washington, D. C., as in other major metropolitan areas throughout the country, the incidence of this disease is believed to be at near-epidemic proportions. A pilot screening of blood lead levels in children aged 18 months to 4 years has just been completed by our Health Department and tends to confirm this suspicion. Approximately 8 per cent of the children so tested harbored levels of 40 micrograms per 100 ml. (a potentially critical concentration) or more.

This disease has just been classified as a reportable communicable disease by the Director of Public Health for the District of Columbia.

For these reasons we take this opportunity to apprise our membership of the existence of the problem and to outline below a clinical resumé to guide physicians toward early detection and treatment of this disorder.

Lead poisoning of epidemic proportions has been thrust into the awareness of the medical community and the lay public. Children 1 to 6 years of age inhabiting dilapidated pre-World War II housing are most at risk. Infants and pre-school youngsters seem to be more susceptible to the central nervous system toxicity of lead, and since fatalities and chronic disability occur most frequently as a result of central nervous-system involvement, attention must be directed toward case-finding and treatment in this age-group.

The physician must be alert to symptoms of irritability, fatigue, unexplained anemia, vomiting, abdominal pain, and symptoms of central nervous-system dysfunction in children, as evidenced by behavioral or personality changes or neurologic syndromes including convulsions, nerve palsy, and coma, particularly when the child is from an area of high risk and engages in pica (in this instance, ingestion of lead-based paint peelings).

A diagnosis of lead poisoning depends on a high index of suspicion and is best established by determining blood lead concentration. Blood concentrations less than 40 μg/100 ml. are considered probably harmless, whereas blood levels of 40 to 60 μg/100 ml. are borderline abnormalities. Lead concentrations in excess of 60 μg/100 ml. are considered abnormal and correlate fairly well with symptoms of lead toxicity. Although patients with blood levels in excess of 100 μg/100 ml. may be totally asymptomatic, they are at great risk to develop lead encephalopathy with an attendant mortality of 5-10 per cent and permanent chronic disability of perhaps 25-50 per cent.

The urinary excretion of delta-aminolevulinic acid (d-ALA) may be elevated early in the course of illness prior to the onset of symptoms. Urinary ALA concentrations in excess of 1 mg./100 ml. correlate very closely with blood lead concentrations in excess of 60 μg/100 ml. and with the presence of symptoms. When obtaining blood is not feasible, urinary ALA excretion may be considered an acceptable screening device.

For all intents and purposes, other tests, such as urinary coproporphyrins, used to establish the diagnosis of lead poisoning, are either not sensitive, not specific or present only in advanced intoxication. These would, at the present time, include red-cell fluorescence, scalp-hair lead determinations, basophilic stippling, and the presence of lead lines on roentgenographic examinations.

Elevated blood lead concentrations in excess of 60 μg/100 ml. are an indication for prompt chelation therapy with BAL and/or EDTA. In addition, the environmental source of the lead poisoning must be corrected prior to returning the child to his home.

All cases of lead intoxication should be reported to the Department of Public Health on the Disease Case Report (PH 148-23) and mailed to the Bureau of Communicable Disease Control, 801 N. Capitol Street, N.W., Washington, D. C., 20002. These forms are available from the Bureau CDC upon request.

STUART DANOVITCH, M.D.
CLIFTON GRUVER, M.D.
Committee on Environmental Health

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HEALTH DEPARTMENT NOTES

An Emergency Medical Service for the Washington Metropolitan Area has been carefully formulated during the past 2 years. When the plan is put into effect there will be uniform standards for ambulance equipment, personnel, communications and coördinated services with the emergency departments of area hospitals.

Mayor Washington's Advisory Committee on Emergency Medical Services was officially formed in October, 1969. The purpose is "to advise and assist the Mayor in developing standards and regulations governing ambulances, equipment and supplies, personnel and training, communications and emergency care and treatment of the injured or suddenly-ill at the scene, in transport, or at the emergency treatment facility."

The 23-member committee represents the medical societies of the District, interested government departments and representatives of the consumer civic groups. The Executive Secretary is George P. Murlas, Bureau of Special Services, Health Services Administration.

The criteria for the Emergency Medical Services were developed in February, 1969 by the National Highway Safety Bureau, U. S. Department of Transportation. Under the Highway Safety Program Standard 11 it was stated that many of those injured in highway accidents die needlessly or are permanently disabled because they do not receive prompt and proper emergency medical care. In most areas there has been inadequate planning for emergency logistics, communications and transportation facilities, and present services are inadequately managed. Ambulance drivers and attendants are commonly not required to be expert in first aid, nor are they required in most parts of the country to carry adequate equipment in their vehicles. Hospitals and ambulances seldom have radio or other direct communications links to each other or to police communications systems.

The Highway Safety Act reflects the importance of emergency services by requiring that the highway safety program standards include coverage of emergency services. When accidents occur it is essential that every available resource be mobilized to save lives, lessen the severity of injuries, protect property, and restore movement of traffic. The Act states further that an essential part of the State Safety Program should be the development of an emergency facilities system. This will require the advice and services of experts and personnel in medicine, law, engineering, communication, and law enforcement.

On the basis of these findings it seemed imperative that highway and other emergency services should be improved in the Washington Metropolitan Area, following the pattern of other major U. S. cities.

Minimum requirements for Emergency Medical Services provides that there are:

1. Training, licensing and related requirements (as appropriate) for ambulance and rescue vehicle operators, attendants, drivers, and dispatchers.
2. Requirements for types and numbers of emergency vehicles, including supplies and equipment to be carried.
3. Requirements for the operation and coördination of ambulances and other emergency-care systems.
4. First-aid training programs and refresher courses for emergency service personnel, and the general public is encouraged to take first-aid courses.
5. Criteria for the use of 2-way communications.
6. Procedures for summoning and dispatching aid.
7. Up-to-date, comprehensive plans for emergency medical services, including: facilities and equipment, definition of responsibility, agreements for mutual support and communications systems.

Under discussion by the Advisory Group are many important subjects, including how the municipal ambulance service should be administered. Being considered is the possibility of establishing a Bureau of Emergency Medical Service, creating a new department equal in status with the Police and Fire Departments, or placing the ambulance service directly under the Health Services Administration. The final outcome will not be determined until after passage of the City's ordinance governing the operations of the ambulance services.

Meanwhile, certain elements in the emergency medical problems are perfectly clear. First, emergency situations involve the Metropolitan Area, not just the District of Columbia. In an emergency, ambulances from nearby Maryland and Virginia transport patients into Washington hospitals. And in some cases District ambulances go into neighboring states when the hospital in those jurisdictions is the closest facility.

Second, the number of emergencies in the area will increase in proportion to the increased traffic. Last year there were 55,800 ambulance responses, of which 30 per cent were true emergencies.

Third, there are 41 ambulance companies in the adjacent Maryland Counties that transport patients to District hospitals. There is an equal number of ambulance companies in nearby Northern Virginia that do the same.

The need to coördinate neighboring ambulance services with the District is important. The need for standardizing emergency services is urgent. It is necessary that the treatment of patients in hospital emergency rooms be the best.

RAYMOND L. STANDARD, M.D., M.P.H.
Director, D. C. Health Services Administration

Clinical Center Studies

The coöperation of physicians is requested in the referral of patients for studies of hemolysis and bilirubin metabolism being conducted by the Metabolism Branch of the National Cancer Institute at the Clinical Center, National Institutes of Health, Bethesda, Md.

Two categories of patients are needed:

(1) Patients with chronic hemopytic states, either hereditary or acquired. Patients with congenital spherocytosis prior to splenectomy or with autoimmune hemolytic anemias are particularly suitable for these studies, but any patient with chronic hemolytic anemia will be considered.

(2) Patients with specific abnormalities of bilirubin metabolism, such as Gilbert's, Dubin-Johnson or Crigler-Najjar syndromes.

Of particular interest are adolescents and adults who are ambulatory. Suitable patients will be admitted to the Clinical Center for study.

Physicians interested in having their patients considered for admission to these studies may write or telephone: Dr. Paul D. Berk, Clinical Center, Room 4N1-17, National Institutes of Health, Bethesda, Md. 20014; telephone (301) 496-5955.

The coöperation of physicians is requested in the referral of previously untreated patients for a continuing study of squamous cell carcinoma of the oral cavity, pharynx, and larynx being conducted by the Radiation Branch of the National Cancer Institute at the Clinical Center, National Institutes of Health, Bethesda, Md.

Previously untreated patients with moderately advanced or advanced disease will be evaluated for treatment with radiation therapy. Suitable patients will be admitted for further studies and treatment.

Physicians interested in having their patients considered for admission to this study may write or telephone: Dr. Thomas C. Pomeroy, Clinical Center, Room B1B-41, National Institutes of Health, Bethesda, Md. 20014; telephone (301) 496-5457.

Report of the Delegates to the AMA Annual Convention

Chicago, Illinois, June 21-25, 1970

A record number of 201 items for consideration was placed before the House of Delegates in Chicago, June 21-25. Actions of the House of Delegates are on file, but items of interest are as follows:

1. The House of Delegates amended the By-Laws to reserve to itself the determination of the amount of annual dues and in light of ongoing expenses, fixed the dues for 1971 at $110.00, an increase of $40.00.
2. The House supported Peer Review as well as legislation or control of manufacture and distribution of amphetamines and barbiturates.
3. A task force was approved to work toward a voluntary universally available Health Benefits Program as an alternative or supplement to AMA Medicredit. Opposition to government controlled national health service was reaffirmed.
4. Approved Council on Medical Education report which will not approve any new internship after July, 1971 and any internship after July, 1975 unless they are integral parts of a residency program.
5. Defined health as a state of physical and mental well being and called for continued efforts in rendering health care to the poor.
6. Approved a statement on abortions stating it is a medical procedure to be done only by a licensed physician in an accredited hospital acting only in accordance with standards of good medical practice with approval of 2 consultants and only if it is within the Medical Practice Act of his state and also stating there is to be no compulsion on any hospital, any physician or any personnel to be a party to an abortion.
7. Called for the establishment of a professional liability program through the AMA.

Other actions established a Section on Neurological Surgery; called for separation of smokers on planes when feasible; deplored FDA actions in release and withdrawal of drugs; called on further membership of physicians on hospital boards; called for increased federal funds for educational purposes; and encouraged local physicians to be present at J.C.A.H. surveys. In addition, a Pulbic Consumer Forum was held at which representatives of various organizations were heard and out of which knowledge of the desires and wishes of many diversified groups came to the attention of the House of Delegates.

Ad Hoc Committee on Planning and Development

(Himmler Report)

In December 1969 the report of the Ad Hoc Committee on Planning and Development chaired by George Himmler, M.D., of New York was presented to the House of Delegates. This Himmler Report as it is known was held for action June 1970 when the various recommendations were studied and the following actions on the recommendations taken by the House of Delegates.

1. Reaffirmed the primary purpose of the AMA and physicians as the promotion of the art and science of medicine and betterment of the public health and reaffirmed that all efforts should be made to make medical services of high quality available to all individuals.
2. AMA is to expand its active role in planning and developing medical care programs and to encourage state societies to do the same. Recognizing the factors of education, housing, civil rights, environment, and transportation that the AMA continue to show interest in these non-medical components.
3. AMA, in seeking a goal of high quality and availability of care, advocate investigation and objective experimentation in new methods of the delivery of health care while still showing faith and trust in private practice and emphasize that different factors as laws, culture, income, and education may require different systems of care for different population groups and geographic areas.
4. Called for state bureaus to study economic aspects of medical practice.
5. Called for life-long postgraduate study for all physicians.
6. Called for AMA to encourage and assist in developing voluntary postgraduate studies for all physicians.
7. Called for continued study of health care problems and development, after legal consultation of health care facilities by medical societies. Also to take an active interest in projects for medical services in areas needing this.
8. Called for clarification of the hospital-physician relationships.
9. Called for collection of data on available and needed medical services from the states as well as priorities and to publicize the same.
10. Referred to Council on Medical Services all current socio-economic research activities.
11. Called for and established a permanent committee on Long Range Planning and Development.
12. Referred the subject of comprehensive area-wide health planning to the new committee and the Board of Trustees.

13. Called for continued exploration with the states and counties of the problem of shortage of health manpower.

14. Called for basic policy on physicians assistants including certification but not licensing.

The Long Range Planning and Development Committee is to be representative of the House of Delegates, the Board of Trustees, the AMA membership at large, and one from SAMA. It is to be concerned with studying and recommending long-range objectives, resources and programs related to these objectives, central association planning, and a study of environment of the association and medicine and report semiannually.

C. Willard Camalier, Jr., M.D., *Delegate*
John J. Hughes, M.D., *Delegate*

DOCPAC BRIEFS

It has become fashionable for political opportunists to pay for patronage through special considerations to their constituents. Thus, Medicine has become a political papaw, fat and ripe for plucking. There is no regard for the overall good or welfare of the patient. The unfortunate aspect is that most physicians have been mesmerized into believing there is nothing that can be done to overcome this social neoplasm.

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ROBERT S. POOLE, M.D.
D.C. Political Action Committee

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News & Personals

Summary of Executive Board Actions

Proceedings of August 24 Meeting

A luncheon was served for the Board members in Conference Room A of the Medical Society. Dr. Robert J. Coffey presided at the meeting that followed which was attended by Drs. Frank S. Pellegrini, Howard Katzman, James E. Boland, Henry D. Ecker, William S. McCune, Frank S. Bacon, John J. Hughes, C. Willard Camalier, Jr., and Mr. Thomas Sadler, Secretary.

The minutes of the July 20, 1970 meeting were approved.

Committee Meetings: The Secretary reported the following committees had met since the last meeting of the Board:

July 21 Grievance Committee
27 Committee on Environmental Health
31 Utilization Committee

August 4 Committee on Public Information and Education
5 Fee Review Committee
6 Physician Placement Committee
6 Traffic Committee
10 Committee on Environmental Health
11 Board of Credentials
18 Grievance Committee
20 Committee on Medical Ethics and Professional Conduct
21 Utilization Committee

Board of Credentials: On recommendation of the Board of Credentials, 12 applicants were elected to Active membership and 1 to Associate membership. Their names appear on page 595. Approval was given to the following changes in membership:

Transfers

Active to Associate: Thomas M. Brown, Stewart W. Bush, Cap H. Oliver, and Ronald W. Smith
Resident-Intern to Active: Albert E. Rolle

Reinstatements

Active: Luther D. Robinson
Associate: Lester S. Blumenthal and David N. Robb

Dr. William M. Ballinger has been elected to Life membership.

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The actions of the official Tincture and Extract of Belladonna result chiefly from their Atropine content . . . conclude Goodman and Gilman

THE PHARMACOLOGICAL BASIS OF THERAPEUTICS
3rd Edition, page 522

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Antrocol provides the prompt, predictable antisecretory action of the belladonna alkaloid, atropine, fortified with sedation and blended with Bensulfoid, contributing to even absorption.

Each tablet or capsule contains: Atropine sulfate, 0.324 mg.; Phenobarbital, 16 mg. (may be habit forming); Bensulfoid, 65 mg. (see white section PDR). The atropine content of Antrocol is the maximum amount the average patient can take at six hour intervals over long periods with comfort.

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PRESCRIBING INFORMATION

Contraindicated in glaucoma. Use cautiously in prostatic hypertrophy. Side-effects of toxic dose of atropine: flushing, dryness of mouth, cycloplegia, tachycardia and urinary retention.

DOSAGE: One tablet or capsule after each meal to correct emotional stress and normalize gastric secretions. In treating peptic ulcer, doses at regular intervals up to eight (8) tablets or capsules per day to provide the proper gastric titer for healing. After ulcer has healed, one tablet or capsule after each meal to maintain a titer unfavorable to recurrence.

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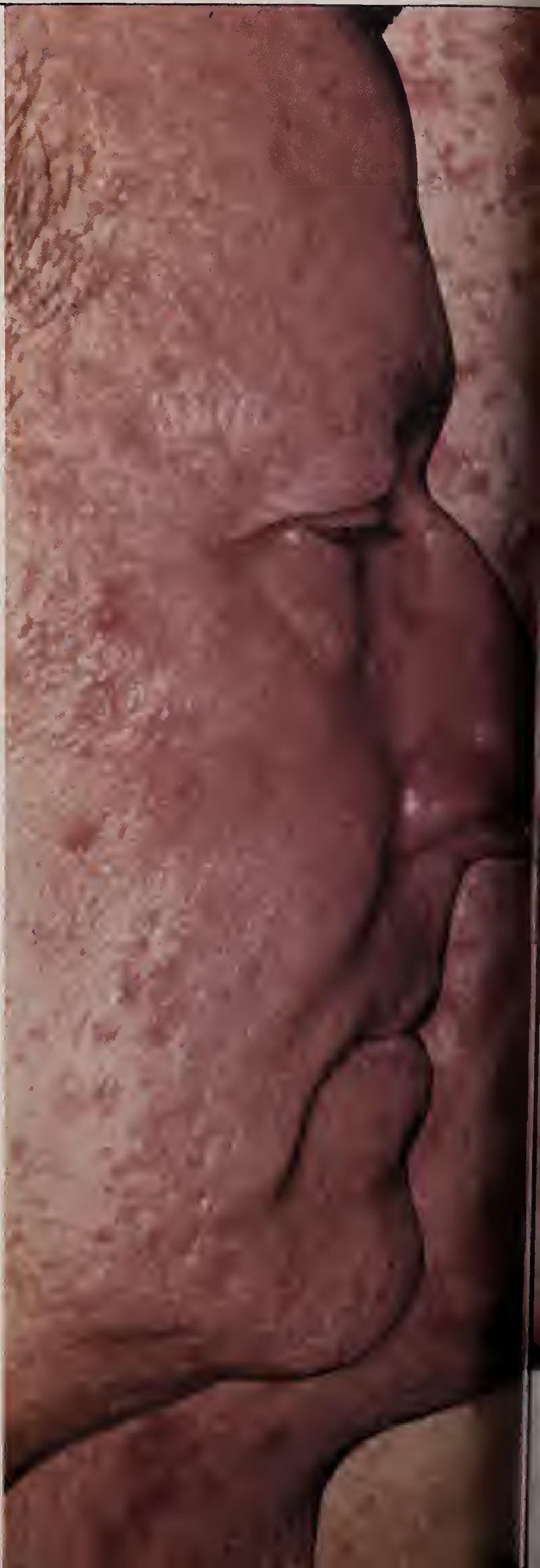
Roche announces Efudex® (fluorouracil) cream/solution

for the treatment of solar/actinic keratoses... a topical alternative to conventional therapy

1/22/68—Treatment with 5% 5-FU cream commences. Patient K.L. showing widespread but mild solar keratoses (also known as actinic keratoses).



Fluorouracil—the Roche contribution

In 1962, Roche Laboratories introduced Fluorouracil Roche® (5-fluorouracil). Early clinical work with this drug suggested that it possessed a selective cytotoxic activity when applied topically to certain kinds of lesions. Based on this work and years of clinical trials, a standardized form of topical fluorouracil can now be recommended for treatment of multiple solar or actinic keratoses.

Efudex® (fluorouracil)—a new alternative to conventional therapy

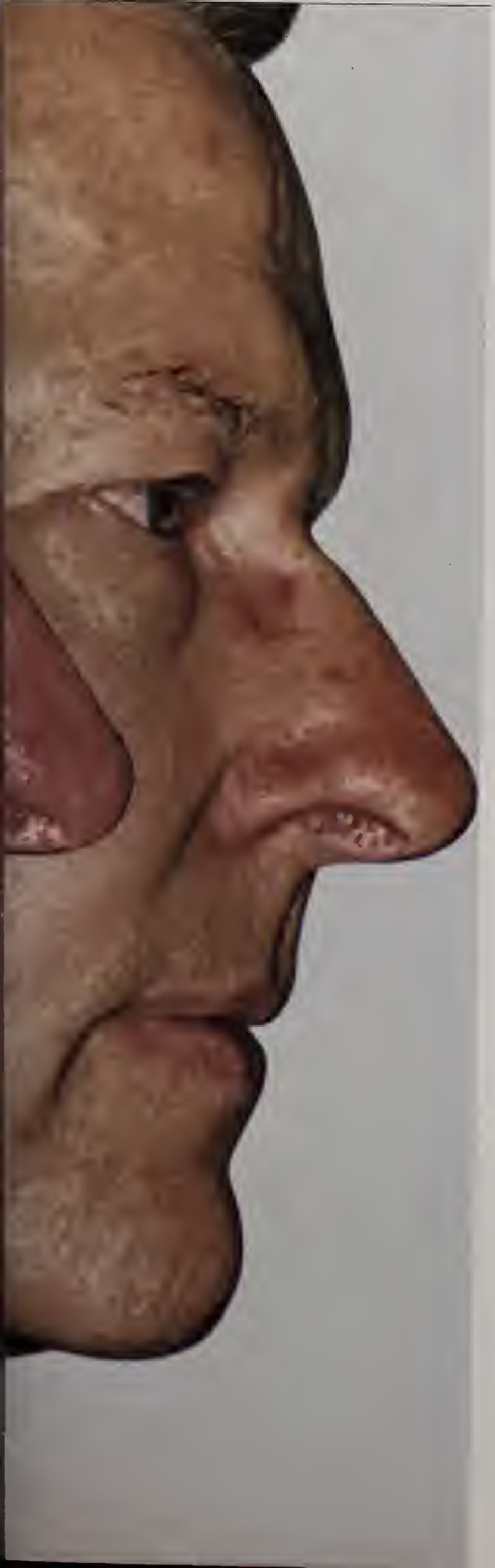
Efudex presents the physician with a topical alternative to surgery in the treatment of solar or actinic keratoses. It is effective, comparatively inexpensive and especially well-suited for treatment of multiple lesions. Important, too, is the highly desirable cosmetic result. Clinical experience demonstrates that treatment with Efudex results in an extremely low incidence of scarring.*

Highly effective on first and later applications

In clinical trials, depending on the dosage form and strength used, complete involution occurred in 77 to 88 per cent of lesions following treatment. The rate of recurrence was low, ranging from 1.7 to 5.6 per cent up to a year after completion of therapy. When lesions did recur or new ones appeared, repeated courses of Efudex therapy proved effective.*

8—After 11 days of treatment. ema is seen at site of keratoses. In ion, numerous lesions not apparent to therapy have become manifest arply defined reactions. Intervening also treated, shows no response to py.

69—One year after cessation of py. Skin appears clear with no evi- of scarring. Examination reveals f recurrence or the formation of esions.



Predictable sequence of therapeutic response

Two to four weeks constitutes a typical course of Efudex therapy. The response is usually characteristic and predictable. After three or four days of treatment, erythema begins to appear in the area of the keratoses. This is followed by an intense inflammatory response, scaling and occasionally moderate tenderness or pain. The height of the inflammatory reaction generally occurs two weeks after the start of therapy, and then begins to subside as treatment is stopped. Within two weeks of discontinuing medication, the inflammation is usually gone. A mild erythema may remain for two to three months before gradually receding.

Selective—with a high degree of safety

Despite the temporary unsightliness and discomfort of the inflammatory episode, Efudex is, in general, more readily tolerated than surgery. Clinical work shows the intense inflammatory response to be limited to the area of the lesion. Normal skin is not similarly affected. Another measure of Efudex safety: systemic absorption of topical fluorouracil was insignificant, indicating a low risk of systemic toxicity.*

Two strengths—two convenient dosage forms

Efudex is available as a 2% or 5% solution or as a 5% cream. It is applied twice daily by the patient with a nonmetal applicator or suitable glove.

Before prescribing Efudex, however, there are two important considerations. First, please consult the complete prescribing information for precautions, warnings and adverse reactions. Second, advise the patient that treated lesions should respond with the characteristic but transient inflammation. A positive sign that Efudex is working for them.

*Data on file, Hoffmann-La Roche Inc., Nutley, New Jersey.

2% and 5% Solutions; 5% Cream Applied twice daily—resolves solar or actinic keratoses.

new
Efudex®
(fluorouracil)
cream/solution

For full prescribing information, please see the following page.

Roche introduces

Efudex®

(fluorouracil) cream/solution the new standardized topical for solar/actinic keratoses

Description: Efudex solutions and cream are topical preparations containing the fluorinated pyrimidine 5-fluorouracil, an antineoplastic antimetabolite.

Efudex Solution consists of 2% or 5% fluorouracil on a weight/weight basis, compounded with propylene glycol, tris-(hydroxymethyl) aminomethane, hydroxypropyl cellulose, parabens (methyl and propyl) and disodium edetate.

Efudex Cream contains 5% fluorouracil in a vanishing cream base consisting of white petrolatum, stearyl alcohol, propylene glycol, polysorbate 60 and parabens (methyl and propyl).

Actions: There is evidence that the metabolism of fluorouracil in the anabolic pathway blocks the methylation reaction of deoxyuridylic acid to thymidylic acid. In this fashion fluorouracil interferes with the synthesis of deoxyribonucleic acid (DNA) and to a lesser extent inhibits the formation of ribonucleic acid (RNA). Since DNA and RNA are essential for cell division and growth, the effect of fluorouracil may be to create a thymine deficiency which provokes unbalanced growth and death of the cell. The effects of DNA and RNA deprivation are most marked on those cells which grow more rapidly and which take up fluorouracil at a more rapid pace. The catabolic metabolism of fluorouracil results in degradative products (*e.g.*, CO_2, urea, α-fluoro-β-alanine) which are inactive.

Studies in man with topical application of ^{14}C-labeled Efudex demonstrated insignificant absorption as measured by ^{14}C content of plasma, urine and respiratory CO_2.

Indications: Efudex is recommended for the topical treatment of multiple actinic or solar keratoses.

Contraindications: Efudex is contraindicated in patients with known hypersensitivity to any of its components.

Warnings: If an occlusive dressing is used, there may be an increase in the incidence of inflammatory reactions in the adjacent normal skin.

Prolonged exposure to ultraviolet rays should be avoided while under treatment with Efudex because the intensity of the reaction may be increased.

Usage in Pregnancy: Safety for use in pregnancy has not been established.

Precautions: If Efudex is applied with the fingers, the hands should be washed immediately afterward. Efudex should be applied with care near the eyes, nose and mouth. To rule out the presence of a frank neoplasm, a biopsy should be made of those areas failing to respond to treatment or recurring after treatment.

Adverse Reactions: The most frequently encountered local reactions were pain, pruritus, hyperpigmentation and burning at the site of application. Other local reactions included dermatitis, scarring, soreness and tenderness.

Also reported were insomnia, stomatitis, suppuration, scaling, swelling, irritability, medicinal taste, photosensitivity and lacrimation.

Laboratory abnormalities reported were leukocytosis, thrombocytopenia, toxic granulation and eosinophilia.

Dosage and Administration: Efudex should be applied twice dail with a nonmetal applicator or suitable glove in an amount of the solution or cream sufficient to cover the lesion. When Efudex is applied to a lesion, a response occurs with the following sequenc erythema, usually followed by vesiculation, erosion, ulceration, necrosis and epithelization. The lower frequency and intensity o activity in adjacent normal skin indicate a selective cytotoxic property. Medication should be continued until the inflammatory reaction reaches the erosion, necrosis and ulceration stage, at which time use of the drug should be terminated. The usual duration of therapy is from 2 to 4 weeks. Complete healing of the lesion may not be evident for 1 to 2 months following cessation of Efudex therapy.

How Supplied: Efudex Solution, 10-ml drop dispensers—containi 2% or 5% fluorouracil on a weight/weight basis, compounded with propylene glycol, tris(hydroxymethyl)aminomethane, hydroxypropyl cellulose, parabens (methyl and propyl) and disodium edetate.

Efudex Cream, 25-Gm tubes—containing 5% fluorouracil in a vanishing cream base consisting of white petrolatum, stearyl alcohol, propylene glycol, polysorbate 60 and parabens (methyl and propyl).

Clinical Studies: The effectiveness of the three preparations as determined by complete involution of solar keratoses was: 2% Solution, 77% of 282 lesions; 5% Solution, 88% of 202 lesions; and 5% Cream, 85% of 189 lesions. In those lesions wher complete involution followed treatment, the rate of possible recurrences observed clinically at periods up to 12 months or mor was: 2% Solution, 4.6% of 218 lesions; 5% Solution, 1.7% of 177 lesions; and 5% Cream, 5.6% of 160 lesions. Because of the toxic potential of fluorouracil, some physicians preferred to use the 2% solution when large areas were to be treated. Approximately 30% of the lesions required treatment for two weeks or less; approximately 78% required four weeks or less for adequate treatment.

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GENERAL NEWS

Donald S. Farver was re-elected president of **Group Hospitalization, Inc.**, the Washington, D.C. area Blue Cross Plan, during the Plan's annual election of officers which was held in March. Also re-elected were Brooks Brown, M.A., *vice chairman of the board*; Josephine Renshaw, M.D., *secretary*; and Douglas R. Smith, *chairman of the board* and president of the National Savings and Trust Company, *treasurer*. Joseph P. Gambel was re-elected *senior vice-president*. F. P. Rawlings, Jr., chairman of the GHI board retired from that post on July 1.

Dr. Roald N. Grant, a surgeon and vice president in charge of professional education for the American Cancer Society, died on August 24th in New York City. Dr. Grant had also been chairman of the professional education committee of the International Union Against Cancer and editor of CA-A Cancer Journal for Clinicians.

Dr. Robert R. Huntley, a former U.S. Public Health Service official, has been appointed professor and chairman of the **Department of Community Medicine and International Health at the Georgetown University School of Medicine**. He succeeds Dr. Patrick J. Doyle who is now with the Westinghouse Electric Corporation.

A native of Wadesboro, North Carolina, Dr. Huntley received his bachelor's degree from Davidson College in 1947 and his doctor of medicine degree from Bowman Gray School of Medicine in 1951. Dr. Huntley has been a member of the School of Medicine and the School of Public Health at the University of North Carolina from 1959 to the present. In 1964 he was named Milbank Memorial Fund Fellow, a title he still holds.

In August, the **Georgetown University School of Medicine** received a grant in the amount of $10,000 from the Gulf Oil Corporation, enabling the Department of Community Medicine and International Health to continue the development of a model health program at nearby Reston, Virginia.

AWARD WINNERS AT MEDICAL SOCIETY'S SCIENTIFIC ASSEMBLY

Dr. Frank S. Pellegrini (second from right), President of the D.C. Medical Society is congratulating the 1970 award winners at the Annual Society Luncheon, September 9, at the Washington Hilton Hotel during the Society's Scientific Assembly. Left to right are: Dr. Sol Katz, who received the Society's Certificate for Meritorius Service; Mr. William E. Gold, selected for the John Benjamin Nichols Award for laymen; and Dr. James M. Bacos, recipient of the Robins Community Service Award.

The Army Surgeon General has announced that **Walter Reed General Hospital** has been designated the Army's first "Organ Transplantation Center," and will receive patients for kidney transplants from 7 Army hospitals to be known as "Regional Dialysis Centers."

Walter Reed General Hospital was chosen to take advantage of the proximity of the Walter Reed Army Institute of Research and the Armed Forces Institute of Pathology.

The Army's Organ Transplantation Center works with civilian centers. Future plans include an even closer affiliation through computerized cadaver-organ-patient matching to enable a more effective use of available organs.

The **George Washington University School of Medicine** has received a grant in the amount of $141,280 from the John A. Hartford Foundation, Inc. This grant will give further support to the studies to isolate and purify large quantities of Cancer Specific Prealbumin (CSP), as well as to separate and identify their isomeric forms. In addition, the researchers hope to characterize completely the physico-chemical properties of CSP and to determine its cellular origin.

MEETINGS

The Department of Pediatrics at Georgetown University School of Medicine is presenting its seventh annual John Fitzgerald Kennedy Memorial Lectureship on November 20, 1970. The Lecturer this year will be Dr. Julius B. Richmond, Professor of Child Psychiatry and Human Development at Harvard University. The lecture will be given in Gorman Auditorium at the Georgetown University Medical Center at 10:30 a.m. Grand Rounds will precede the lecture. All interested physicians are invited to attend. Additional information may be obtained by writing: The Department of Pediatrics, Georgetown University Medical Center, Washington, D.C. 20007.

Woman's Auxiliary Notes

The new President of the Woman's Auxiliary to the Medical Society of the District of Columbia, Mrs. Sarah D. Pate, brings to this office a thorough knowledge of its workings and needs, through her long and distinguished service in auxiliary work.

She has served in many capacities including Program Committee Chairman and Corresponding Secretary. At Providence Hospital she has served as Seaton Gift Shop Volunteer Chairman, Program Chairman, Public Relations Chairman, and President, 1966-68. She is a member of Southern Medical Auxiliary and was its Doctors Day Chairman for the year 1967.

Sarah Doyle Pate, the daughter of a lawyer, grew up in Georgia. She received her A.B. degree in English and History from Georgia State College for Women. While studying for her Masters in History at the University of Georgia, she met and married Charles V. Pate, then a student studying for his M.S. degree in science. After receiving his medical degree from the University Medical School, he interned at the University Hospital in Augusta, Georgia. Washington, D.C. has been their home since Dr. Pate's internship and residency at St. Elizabeth's Hospital.

HARRIS & EWING

MRS. CHARLES V. PATE

President, Woman's Auxiliary, 1970

The Pates have a daughter, Mary, whom they like to call Penny. She is a graduate of Smith College and is now a senior at Johns Hopkins Medical School. She was married to Dr. William W. Scott, Jr. last summer.

Sarah is past president of Alpha Chapter of Phi Delta Gamma, a professional sorority. She is a member of the Chevy Chase Woman's Club and has served on the Welfare Committee and as Chairman of the Hospitality Committee. She is Chairman of the Civic and Hospitality Committee of the 20th Century Club. Also, she is a member of the League of Republican Women and the American Association of University Women.

Her hobbies are reading, traveling and sports.

MRS. ETTA RICHWINE
Publicity Chairman

PERSONALS

Dr. Peter Y. Evans, associate professor of surgery, has been appointed head of the Division of Ophthalmology in the Department of Surgery at the Georgetown University School of Medicine.

Dr Evans was born in Tokyo, Japan, and grew up in Austria. He attended the University of Vienna and received his doctor of medicine degree from the Innsbruck University Medical School in Austria in 1951. He has been at Georgetown since 1958.

Dr. Marvin C. Korengold, President-elect of the Medical Society of the District of Columbia, has been appointed to direct the Stroke Program at the new Metropolitan Hospital for Extended Care.

The new institution is located at 1143 New Hampshire Avenue, N.W., and is scheduled to open in December.

The prime purpose of the new hospital will be to assist patients in transition from their acute care stage to one of rehabilitation, through the development of a new life plan, and to enable them to receive as much function, mobility and independence as possible.

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NEW MEMBERS

Active

MARTIN I. BERTMAN, M.D. Office: 1835 Eye Street, N.W. Born in Perth Amboy, N.J. Medical degree: New York Medical College, 1965. Specialty: Obstetrics-Gynecology.

GERRIT H. BESSELAAR, M.D. Office: 2150 Pennsylvania Avenue, N.W. Born in Rotterdam, Holland. Medical degree: State University of Leiden, 1959. Specialty: Internal Medicine.

OLCAY S. CIGTAY, M.D. Office: 3800 Reservoir Road, N.W. Born in Izmir, Turkey. Medical degree: University of Istanbul, 1956. Specialty: Radiology.

WILLIAM O. DOBBINS, III, M.D. Office: 2150 Pennsylvania Avenue, N.W. Born in Phoenix, Ariz. Medical degree: Medical College of Alabama, 1957. Specialty: Internal Medicine.

WILLIAM P. FORTUNE, M.D. Office: 2150 Pennsylvania Avenue, N.W. Born in Boston, Mass. Medical degree: George Washington University, 1965. Specialty: Orthopedic Surgery.

GUY W. GARGOUR, M.D. Office: 1225 19th Street, N.W. Born in Cairo, Egypt. Medical degree: Cairo University, 1961. Specialty: Neurosurgery.

MARTIN GILLER, M.D. Office: St. Elizabeth's Hospital. Born in New York, N.Y. Medical degree: Georgetown University, 1966. Specialty: Psychiatry.

ROBERT I. KEIMOWITZ, M.D. Office: 2150 Pennsylvania Avenue, N.W. Born in Middletown, N.Y. Medical degree: University of Vermont. 1965. Specialty: General Practice.

MICHAEL J. MALONE, M.D. Office: 2125 13th Street, N.W. Born in Portland, Me. Medical degree: Georgetown University, 1956. Specialty: Neurology.

JOHN P. NAUGHTON, M.D. Office: 2150 Pennsylvania Avenue, N.W. Born in West Nanticoke, Pa. Medical degree: Oklahoma University, 1958. Specialty: Internal Medicine.

MANOOCHEHR POOYA, M.D. Office: 708 Massachusetts Avenue, N.E. Born in Meshed, Iran. Medical degree: University of Tehran, 1961. Specialty: Internal Medicine.

MONOCHEHR SOBHANY, M.D. Office: 1325 Upshur Street, N.W. Born in Kermanshah, Iran. Medical degree: Tabriz Medical School, 1963. Specialty: Internal Medicine.

Associate

FRANCIS C. JACKSON, M.D. Office: 50 Irving Street, N.W. Born in Rutherford, N.J. Medical degree: University of Virginia, 1943. Specialty: General Surgery.

►OBITUARIES

Benjamin Franklin Dean, Jr., M.D.

(1898–1970)

Dr. Benjamin F. Dean, Jr., former chairman of the District of Columbia Board of Police and Fire Surgeons, died August 10, 1970, at the Washington Hospital Center. He lived at 3730 Manor Road, Chevy Chase, Md.

Born in Washington, May 24, 1898, Dr. Dean graduated from Central High School and served in the Marine Corps from 1918 to 1919. He received both his bachelor's and medical degrees from George Washington University. From 1923 to 1924 he interned at Emergency Hospital and served a residency there from 1924 to 1925. He held a fellowship in surgery at the Mayo Clinic from 1926 to 1930 and received a master's degree in surgery from the University of Minnesota in 1929.

Dr. Dean was an associate in surgery at the George Washington University School of Medicine from 1930 until 1941 when he became Assistant Clinical Professor of Surgery, serving in that position until his retirement in 1964. He also served on the staff at several area hospitals.

A Life member of the Medical Society of the District of Columbia, Dr. Dean was a Fellow of the American College of Surgeons and a member of the American Medical Association and the Washington Academy of Medicine.

He is survived by his wife, Mrs. Catherine Grissinger Dean, of the home address, and 2 sons, Benjamin F. Dean, III, of Bethesda, Md., and Thomas A. Dean, of Glen Ridge, N.J.

Donald McCarthy Harper, M.D.

(1899-1970)

Dr. Donald McC. Harper, professor of otolaryngology at Howard University for 23 years, died August 18, 1970 in Port of Spain, Trinidad. He resided at 1915 New Hampshire Avenue, N.W.

Dr. Harper was born in Port of Spain, Trinidad, December 11, 1899. He graduated from Queen's Royal College and Howard University, and in 1928 received his medical degree from Howard University College of Medicine. He interned at Freedman's Hospital from 1928 to 1929. In 1930 he became a clinical professor of otolaryngology at Howard and taught there until 1954.

During World War II, Dr. Harper was an examining physician for the Selective Service.

For more than 30 years, he served as the voluntary physician for the Stoddard Baptist Home in the District.

A Fellow of the American Academy of Ophthalmology and Otolaryngology, a Fellow of the Geriatrics Society, and a diplomate of the American Board of Otolaryngologists, Dr. Harper was also a member of the National Medical Association, the Chirurgical Medical Society, and the World Medical Association. He was elected to membership in the Medical Society of the District of Columbia in 1954 and became a Life member this year.

He is survived by 2 sisters, Katie and Elsie Harper of Trinidad, and 4 brothers, James Y. Harper, of Washington, and William, Thomas, and Gordon Harper, all of Trinidad.

Delbert Pinkerton Johnson, M.D.
(1912–1970)

Dr. Delbert P. Johnson, Washington psychiatrist, died May 23, 1970. His offices were at 4600 Connecticut Avenue, N.W.

Born in Soldier, Kansas, April 18, 1912, Dr. Johnson attended the University of Kansas where he received his bachelor's degree and in 1937 his medical degree. He interned at Trinity Lutheran Hospital in Kansas City, Mo. from 1937 to 1938 and was a resident at State Hospital #2 in St. Joseph, Mo. from 1938 to 1942.

Dr. Johnson served in the Army Air Force Medical Corps from 1942 to 1946 and attained the rank of Major.

In 1948 he became a member of the psychiatric staff at the Veterans Administration Mental Hygiene Clinic in Baltimore where he served for 10 years. In 1958 he became Chief of the School Mental Health Unit of the D.C. Department of Health.

Dr. Johnson was a fellow of the American Psychiatric Association, a member of the American Medical Association and the Washington Psychiatric Society, and had been an Active member of the Medical Society of the District of Columbia since 1959.

He is survived by his wife, Margaret C. Johnson, and a daughter, Lisa Ann.

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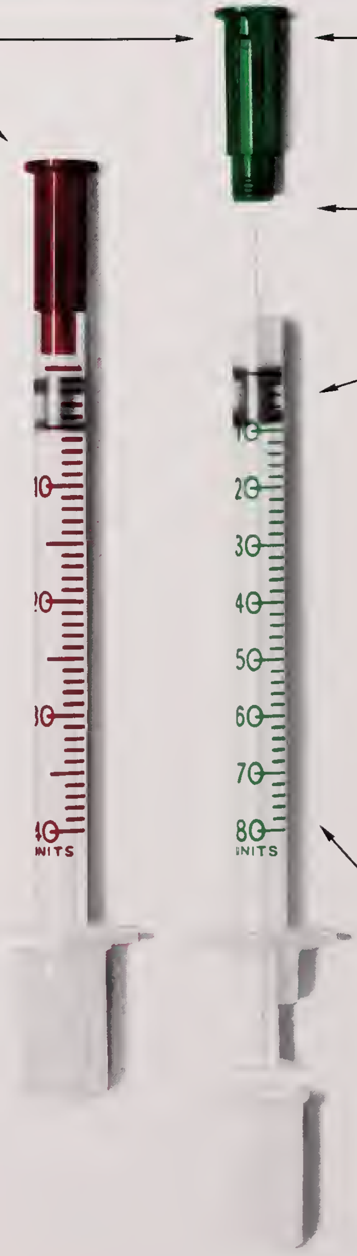

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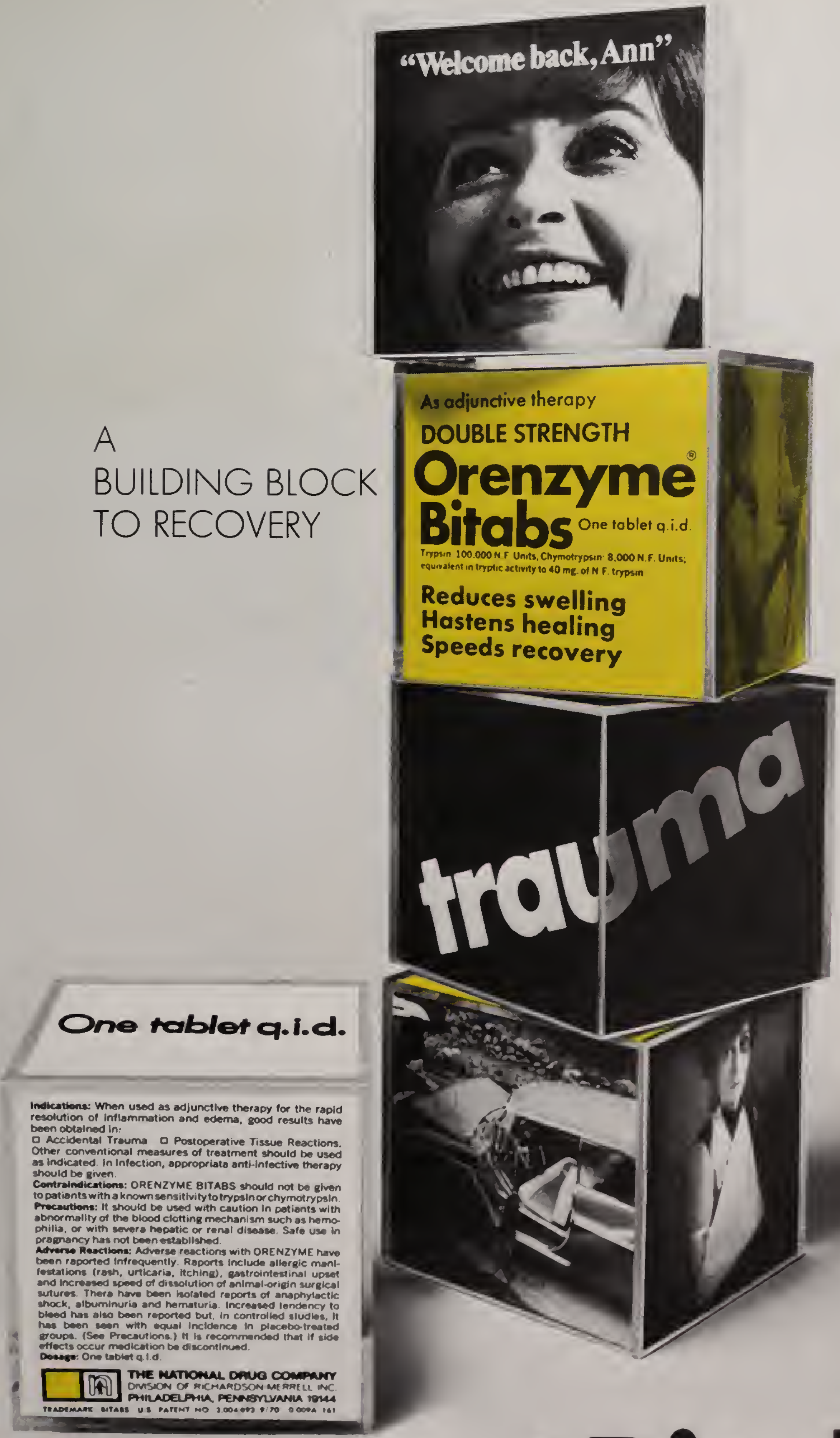
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Contraindications: Known sensitivity to sulfonamides.
Precautions/Adverse Reactions: The usual precautions for topical and systemic sulfonamides should be observed because of the possibility of absorption. Burning, increased local discomfort, skin rash, urticaria or other manifestations of sulfonamide toxicity are reasons to discontinue treatment.
Dosage: One applicatorful or one suppository intravaginally once or twice daily.
Supplied: Cream—Four-ounce tube with or without applicator. Suppositories—Box of 12 with applicator.

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Book Reviews

Homeostatic Regulators. A Ciba Foundation Symposium held jointly with the Wellcome Trust. Edited by G. E. W. WOLSTENHOLME AND JULIE KNIGHT Price, $13.75. Pp. 327, with 84 illustrations. London: Churchill, 1969. [Vernon E. Martens, M.D.]

This is a series of papers and discussions of a symposium held under the sponsorship of the Ciba Foundation and Wellcome Trust on homeostatic regulators. The group was composed of various disciplines primarily interested in experimental biology, physiology, and pathology. While the papers are interesting, they would only be useful to those associated with research in biology and medicine.

In the concluding remarks of the Chairman of the Conference, the title of the conference Homeostatic Regulation was defined as a buffering or defense arrangement inside a number of biological systems to defend them against external forces or disorders. However, opinion of the various authors differed considerably. This book will have limited application to those interested in the experimental approach to homeostatic regulators in biology and medicine.

VERNON E. MARTENS, M.D.

Today's Health Guide, revised edition. A manual of health information and guidance for the American family. Edited by W. W. Bauer, M.D. Price, $5.00. Pp. 624. Chicago: American Medical Association, 1968.

This Guide, not before reviewed in the Annals, is one of the many excellent reference books published by the AMA. This one has been prepared as a guide "to the family in making the best and most economical use of the sources of health information, preventive medical services, treatment of illness, and adequate meeting of emergencies." More than 200 people—practicing physicians and specialists in medicine and allied fields—have produced the book. The list of contributors, which reads like a "Who's Who in Medicine," includes many names from the Washington area.

The book is divided into 15 parts, with 3 to 10 chapters in each part. The anatomy of the human body, in Part III, is depicted by Trans-vision® color transparencies, showing front and back views of the muscles and the circulatory, respiratory, and digestive systems.

Sections on family health problems, preventive health care, emotional health, recreation, medical services, disabling diseases, drugs, and community health are indicative of today's approach to medicine.

Following the last chapter on "Medical Folklore," which is fascinating reading, are an extensive and excellent glossary, an appendix on Questions and Answers on Health, and space for recording family history, illnesses, immunizations, etc., plus a detailed index.

No family could make a better 5-dollar investment than to purchase this modern health guide.

A. LOUISE ECKBURG

Laser Photocoagulation and Retinal Angiography, with Current Concepts in Retinal and Choroidal Diseases. H. CHRISTIAN ZWENG, M. D., HUNTER L. LITTLE, M. D., AND ROBERT R. PEABODY, M. D., AND ROBERT R. PEABODY, M. D. Price, $26.50. Pp. 297, with 283 illustrations and 3 color plates. St. Louis: Mosby, 1969.

This reviewer considers this a good book. However, the scope of the subject matter exceeds the title, and, the feeling cannot be avoided that the title is somewhat contrived. The authors' forte is laser photocoagulation; in fact, they are among the pioneers in the use of ruby laser photocoagulation in ophthalmology. It is understandable, then, that they should wish the words "laser photocoagulation" to be prominent in the title. I question also the justification for including the 2 subjects in 1 volume. All this negative criticism would be resolved were the title something like: "Diagnosis and Management of Retinal and Choroidal Diseases, including the use of fluorescein angiography as a diagnostic aid and laser photocoagulation as a method of treatment."

In Part I of the book, entitled Technology, the authors explain the principles of photocoagulation and point out the differences between xenon-arc and ruby laser photocoagulation. They describe the various ruby lasers commercially available. They also describe some of the other lasers, such as the argon one. Also in Part I the techniques of fluorescein retinal angiography are described.

In Part II (the remaining 243 pages of the book), entitled Clinical Applications, the authors discuss a large number of retinal diseases. Their experience has been considerable and they offer a vast amount of useful information. There are many excellent photographs which illustrate the fine points of fluorescein angiography interpretation.

The chapter on diabetic retinopathy is particularly good. It sums up the historical and current thought on this dreaded entity. Also appealing to me are the chapters on the various macular diseases.

The bibliography is quite complete. This volume is an excellent "ready reference" which could be useful time and time again to any ophthalmologist interested in retinal and choroidal diseases.

HARRY M. McALLISTER, M.D.

Adler's Physiology of the Eye: Clinical Application, 5th ed. Edited by ROBERT A. MOSES, M.D., with 6 contributors. Price, $22.50. Pp. 713, with 656 illustrations. St. Louis: Mosby, 1970.

Robert Moses, M.D., and his associates have left their mark in the Fifth Edition of this famous work.

As a practising clinical ophthalmologist, it is a humbling experience to be made aware of the rapid advances in knowledge both theoretical and practical since the earlier editions from which I studied. This new edition is extremely well organized and presents a multitude of important information in a very palatable form. The content is weighed heavily in a clinical direction and is thus successful in preventing the "sleep reflex" which was frequently elicited by the earlier editions!

The multiplicity of authors adds further insight and understanding to the various chapters. For example, the chapter dealing with the lacrimal apparatus by Benjamin Milder, contains valuable photographs of patients and x-ray diagnostic studies which are of great teaching value, especially for the resident-in-training.

One is continually impressed in the revised chapters by the added stress on clinical significance of scientific data. The language and style are to the point. The reader comes away with definite answers and ideas.

The resident ophthalmologist is indeed fortunate to have such a fine edition available at this time. The information contained therein will serve him well both in practice and in preparing for Board Examinations. The practising Ophthalmologist can up-date his knowledge in a very pleasant manner.

ERNEST ZIMMERMAN, M.D.

NATIONAL & REGIONAL MEETINGS

November 1-4: American Society of Tropical Medicine and Hygiene. San Francisco Hilton, San Francisco. Address: Dr. M. M. Brooke, Secretary-Treasurer, P.O. Box 15208, Emory University Branch, Atlanta, Ga. 30333.

November 6-8: Association of Clinical Scientists. Shoreham Hotel, Washington, D.C. Address: Dr. F. William Sunderman, Jr., Secretary-Treasurer. University of Connecticut School of Medicine, 2 Holcomb Street, Hartford, Conn. 06112.

November 7-10: American Medical Women's Association. Puerto Rico Sheraton Hotel, San Juan, P.R. Address: Mrs. Gertrude Conroy, Executive Director, 1740 Broadway, New York City. 10019.

November 9-13: International Symposium on Drug Abuse, sponsored by University of Michigan Medical School, Postgraduate Medicine Department. Towsley Center, Ann Arbor, Mich. Address: Mr. Donald C. Kraushaar, Program Associate, University of Michigan Medical Center, Ann Arbor, Mich. 48104.

November 10-17: American Heart Association. Shelburne-Dennis Hotel, Atlantic City, N.J. Address: Dr. James M. Hundley, Executive Director, 44 East 23rd Street, New York City 10010.

November 16-19: Southern Medical Association. Dallas. Address: Mr. Robert F. Butts, Executive Director, 2601 Highland Ave., Birmingham, Ala. 35205.

November 16-19: Southern Medical Association Section on Ophthalmology. Dallas. Address: Dr. Hilliard M. Haik, Section Secretary, 812 Maison Blanche Bldg. New Orleans 70112.

November 20-24: International College of Surgeons. International Hotel, Las Vegas. Address: Dr. Aldo Parentela, Executive Secretary, 1516 Lake Shore Drive, Chicago. 60610.

November 29-December 2: American Medical Association (Clinical Convention). Boston. Address: Dr. Ernest B. Howard, Executive Vice-President, 535 North Dearborn Street, Chicago. 60610.

November 29-December 3: Association of Military Surgeons of the U.S. Washington-Hilton Hotel, Washington, D.C. Address: Brig. Gen. Frank E. Wilson, U.S.A.R., Executive Director, 8502 Connecticut Ave., Chevy Chase, Md. 20015.

November 29-December 4: Radiological Society of North America. Palmer House, Chicago. Address: Dr. Maurice D. Frazer, Secretary, 713 East Genesee Street, Syracuse, N.Y. 13210.

CHAPTER IV

Medical Publications of the Society

IN AN ADDRESS BEFORE THE Medical Society on December 20, 1865 Dr. Joseph M. Toner, who was to become President of the Society in 1871, deplored the fact that there were no records of transactions of the Society or a history of epidemic diseases that had prevailed in Washington in the early days. Despite the unavailability of any records prior to 1938 because of loss by fire, he now proposed that essays read before the organization be published along with its transactions. However, nothing came of his proposal.

Four years later, Dr. Thomas Miller, then President of the Society, brought up the matter again. He proposed that the Society sponsor a publication to be known as *Quarterly Medical Surgical Journal*. It finally made its appearance in April 1870 as the *National Medical Journal* with Dr. C. C. Cox, not a Medical Society member, as Editor. It might have been successful, but the Medical Society was embroiled in a controversy over the admission of Negro physicians to membership. The first volume for 1871 was published, but the publication ceased in 1872.

In 1878 the *Virginia Medical Monthly* was asked to publish 8 or 9 pages of the Medical Society's transactions. Conditions stipulated by the editor of the *Monthly* were not acceptable. Several years later a satisfactory arrangement was made with the *Maryland Medical Journal*. Proceedings of the District Society appeared in that publication from 1883 to 1885.

At the conclusion of this period an agreement was entered into with the *Journal of the American Medical Association*, and for the years of 1885 to 1889 the *Journal* published not only the proceedings of the Society but a number of papers read before it. Complaints finally arose that the *Journal* was behind in publication. As a result, the Medical Society began shopping around for other journals that would publish the Society's transactions.

Dr. Charles H. Stowell, a Medical Society member, undertook the publication of what was called the *National Medical Review*. It began with the inclusion of the Society's transactions in November 1892. The *Review* expired in 1898 with a heavy loss to its publishers.

In his Presidential Address on December 18, 1901 Dr. D. S. Lamb recommended that the Society publish its own journal. This was approved and the *Washington Medical Annals* came into existence. Drs. Lamb, W. A. Wells, and V. B. Jackson were appointed to the Editorial Committee. The *Washington Medical Annals*, which began publication in 1902, had a "flourishing existence" until it gradually expired during World War I. Its success was largely credited to the dedication of Dr. Lamb, who was the author of the History of the Medical Society of D. C., Part I.

Medical Annals of D. C.

Dr. Coursen B. Conklin became Secretary-Treasurer of the Medical Society in 1924. Like other members of the Society before him who had served in this capacity, he was dedicated to his office, with this difference—that he established an office in the new

Medical Society building which had been erected in 1922. He also devoted far more time to his assignment than did his predecessors. A stocky man, with a rather handsome face, he was the kindest of men. Afflicted as a young man with polio, he had a slight limp, but ignored this handicap. He was bent on making a fine record as a Medical Society official, and he did.

He was responsible for a number of innovations, among them a monthly bulletin containing a brief account of Medical Society activities. To begin with, it was in mimeograph form, but beginning with the 1929 issues it was printed. The last number appeared in 1931, because Dr. Conklin believed that time was at hand when the Society should have a regular state medical journal.

With the Medical Society's approval, Dr. Conklin established the *Medical Annals of the District of Columbia,* with himself as Managing Editor and Dr. Wallace M. Yater Editor.

Dr. Yater, then Head of the Department of Medicine at Georgetown University School of Medicine, was also the author of a standard textbook on medicine which was to give him an international reputation. Considering his accomplishments, he was surprisingly youthful in appearance. He was also on the way to becoming a doctor's doctor. The next 14 years were ones of satisfactory growth for the *Medical Annals*. However, Dr. Yater encountered arid periods when there was a shortage of scientific material for publication. When this occurred there was nothing for him to do but to write the required articles himself.

The team of Drs. Conklin and Yater worked together without any friction. They were ideally suited to each other.

Changing Times

When the Medical Society employed its first full-time executive in 1938, it signified more of a change in the conduct of the *Medical Annals* than Dr. Conklin anticipated. The new Executive's understanding with the Medical Society was that he would become Managing Editor of the *Medical Annals.*

Dr. Yater Takes Over

Upon assuming his new duties on June 1, 1938 he had a discussion with the Medical Society's Executive Board. He proposed that Dr. Conklin be made Editor-in-Chief, Dr. Yater to retain his position as Editor. The Board approved, but when Dr. Conklin was approached he turned down the proposal and resigned as Managing Editor, whereupon Dr. Yater remained Editor and Mr. Theodore Wiprud was named Managing Editor.

The latter, with Dr. Yater's approval, made changes in the *Medical Annals* and wrote material for it of a non-scientific nature, beginning with a modest column entitled "Pertinent Paragraphs." He finally developed a more ambitious one, "In and Out of Focus" by the Observer (1945), of which Dr. Yater was to say in 1962 that it was "widely acclaimed." He also said that during the 17 years that Mr. Wiprud was Managing Editor he had worked in complete "harmony with the Editor," who was responsible for all of the contents of the *Medical Annals*. For his part, the Managing

Editor could say that his column had never been censored, even though the Editor may have at times disagreed with his views.

Miss A. Louise Eckburg, who had orginally been employed by Mr. Wiprud in 1938 as Executive Clerk, which position encompassed membership, bookkeeping, and supervisory duties along with preparing the *Annals*, became a full-time member of the *Medical Annals* staff in 1942, first as Editorial Assistant and later (1948) as Assistant Editor. Unusually well qualified for this assignment, she was to demonstrate her efficiency and dedication to her task. Miss Eckburg was responsible for the news section and the mechanical preparation of the publication. She also contributed editorials.

In the final analysis, the success of the *Medical Annals* rested on the shoulders of Dr. Yater. As the publication prospered financially, greater demands were made on him. He had become a national figure as the author of two medical books and many medical articles, and as Secretary-General of the American College of Physicians. As a result, scientific articles now came more readily.

Associate Editors

The first Associate Editors of the *Medical Annals* were Dr. Hugh H. Hussey, an able young man with a bright future, and Dr. Robert M. Choisser, an outstanding Washington pathologist.

Others who were appointed and served as Associate Editors in the years that followed were:

Dr. James N. Greear, Ophthamologist, President of the Medical Society (1944-45)

Dr. Donald Stubbs, Anesthesiologist, President of the Medical Society (1961), who became a nationally known figure in the Blue Shield movement

Dr. Joseph S. Wall, eminent pediatrician, President of the Medical Society (1926)

Dr. Charles Stanley White, one of Washington's best known surgeons, President of the Medical Society (1927)

Dr. R. Lee Spire, a prominent and much loved Washington general practitioner

Dr. Frederic G. Burke, a young and capable pediatrician, for many years Director of the Department of Pediatrics at Georgetwon University School of Medicine

Dr. Frank D. Costenbader, pediatric ophthamologist, President of the Medical Society (1951-52), and first President of Medical Service of D.C., Washington's Blue Shield Plan

Dr. Winfred Overholser, eminent psychiatrist, Superintendent of St. Elizabeths Hospital

Dr. Thomas M. Peery, Professor of Pathology, George Washington University School of Medicine.

Dr. Herbert P. Ramsey, obstetrician and gynecologist, President of the Medical Society (1953-54), one of Washington's outstanding civic leaders

Dr. I. Phillips Frohman, outstanding general practitioner and author

Dr. George E. Schreiner, Professor of Medicine, Georgetown University School of Medicine, and Director of the Renal and Electrolyte Division at Georgetown Hospital

Prosperous Years

During the latter 1940's and the 1950's the *Medical Annals* enjoyed unprecedented financial prosperity. Most of the income was from drug-company advertising, funneled to the *Medical Annals* by the State Medical Journal Advertising Bureau, a coöperative agency originally sponsored by the AMA, which afterward continued operation independently with the AMA's blessing.

This prosperity made it possible to improve the appearance and insure the stability of the publication. A portion of the membership dues still had to be used to subsidize the *Medical Annals*, but that was of little concern during a period of prosperity.

Washington was rapidly becoming a world medical center. In 1957 it occurred to Dr. Ramsey, Associate Editor, that the *Medical Annals* might take advantage of this situation. He proposed to the Editorial Board that Consulting Editors be appointed, consisting of representatives from each Government and private medical institution in the Metropolitan Area. Through them the Editor would obtain more and better scientific material for the publication. Dr. Yater submitted the plan to the Executive Board which gave its approval. The plan did not have much impact on the journal until Dr. Peery suggested that the institutions take the responsibility for providing material by their staffs for designated "special" issues of the *Annals*.

In the nonscientific section during these years there were such features as the "President's Page," "Editor's Forum" (contributions by medical editors elsewhere), "Washington Physicians of Yesterday," "Our Living Past Presidents" (photos and biographies), and "On the Lighter Side."

There was only one disquieting note in those years and that was the burgeoning of medical publications. Physicians were innundated with them—some, fortunately, were short-lived—which they could not find time to read. However, the State Medical Journals had a special attraction for the readers in their jurisdictions.

One of the proposals during the 1950's was that the *Medical Annals*, like *The New England Journal of Medicine*, become more than a state medical journal. The growth of Washington as a medical center and the availability of superior scientific material prompted this suggestion, but for some reason it lacked sufficient appeal to win approval.

However, *Medical Annals* as a state medical journal had attracted national attention, being rated in 1947 as one of the best in the country. That year the Managing Editor became the first layman chosen Chairman of the AMA Conference of Editors, which was held in Chicago. A few months later he presided at the AMA State Medical Journal Clinic in the same city.

In the 1950's the Medical Annals acquired a sizable number of out-of-District subscribers, and its exchange list grew considerably. Among the subscribers were medical libraries, medical schools, foundations, and interested individuals and organizations.

At the close of the 1950's an investigation of drug firms by the so-called Kefauver Senate Committee made it evident that the lush financial period for medical journals was over. However, state medical journals did not feel the full impact of the Congressional investigation until 1961, when income from advertising began to drop abruptly.

The Managing Editor was elected a member of the Board of Directors of the State Medical Journal Advertising Bureau in 1960. However, his tenure lasted only until his resignation as an official of the Medical Society of the District of Columbia in 1962.

Dr. Yater had served longer in his position as Editor than any other Editor of a state medical journal. His tenure by 1962 had covered a period of 30 years. Few such publications could boast of a more distinguished man of medicine at its helm. His tenure, however, was not at an end in 1962. Neither was that of Miss Eckburg, who still remained a member of the *Medical Annals* staff.

Monthly Bulletin

Because of a reduction in the number of business meetings of the Medical Society, the Executive Board in 1940 voted that there should be a monthly bulletin issued to keep members abreast of developments in the organization. The bulletin was gradually expanded to include a schedule of all medical meetings in Washington. In 1962 it was still in existence.

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INDICATIONS: Patients with moderate to severe anxiety and/or agitation and depressed mood; patients with depression in whom anxiety and/or agitation are severe; patients with depression and anxiety in association with chronic physical disease; schizophrenics with associated depressive symptoms.

CONTRAINDICATIONS: Central nervous system depression from drugs (barbiturates, alcohol, narcotics, analgesics, antihistamines); bone marrow depression; pregnancy; and in patients with known hypersensitivity to phenothiazines or amitriptyline. Do not give in combination with MAOI drugs because of possible potentiation that may even cause death. Allow at least two weeks between therapies. In such patients therapy with TRIAVIL should be initiated cautiously, with gradual increase in the dosage required to obtain a satisfactory response. Do not give concomitantly with guanethidine or similarly acting compounds since it may block the antihypertensive effect.

WARNINGS: Patients should be warned against driving a car or operating machinery or apparatus requiring alert attention, and that response to alcohol may be increased.

PRECAUTIONS: Suicide is always a possibility in mental depression and may remain until significant remission occurs. Supervise patients closely in case they may require hospitalization or concomitant electroshock therapy. Untoward reactions have been reported after the combined use of antidepressant agents having various modes of activity. Accordingly, consider possibility of potentiation in combined use of antidepressants. Use with caution in patients with glaucoma and those with problems of urinary retention. Perphenazine can lower the convulsive threshold in susceptible individuals. It should be given with caution to patients with convulsive disorders. Dosage of the anticonvulsive agent may have to be increased. Not recommended for use in children. Mania or hypomania may be precipitated in manic-depressives (perphenazine in TRIAVIL seems to reduce likelihood of this effect). If hypotension develops, epinephrine should not be employed, as its action is blocked and partially reversed by perphenazine. Caution patients about errors of judgment due to change in mood.

ADVERSE REACTIONS: Similar to those reported with either constituent alone.

Perphenazine: Should not be used indiscriminately. Use caution in patients who have previously exhibited severe reactions to other phenothiazines. Likelihood of untoward actions greater with high doses. Closely supervise with any dosage. Side effects may be any of those reported with phenothiazine drugs: extrapyramidal symptoms (opisthotonos, oculogyric crisis, hyperreflexia, dystonia, akathisia, dyskinesia, parkinsonism) usually controlled by the concomitant use of effective antiparkinsonian drugs and/or by reduction in dosage, but sometimes persist after discontinuation of the phenothiazine; skin disorders (photosensitivity, itching, erythema, urticaria, eczema, up to exfoliative dermatitis); other allergic reactions (asthma, laryngeal edema, angioneurotic edema, anaphylactoid reactions); peripheral edema; reversed epinephrine effect; hyperglycemia; endocrine disturbances (lactation, galactorrhea, disturbances of menstrual cycle); altered cerebrospinal fluid proteins; paradoxical excitement; EKG abnormalities (quinidine-like effect); reactivation of psychotic processes; catatonic-like states; autonomic reactions, such as dryness of the mouth, headache, nausea, vomiting, constipation, obstipation, urinary frequency, blurred vision, nasal congestion, and a change in the pulse rate; hypnotic effects; pigmentary retinopathy; corneal and lenticular pigmentation; occasional lassitude; muscle weakness; mild insomnia. Other adverse reactions reported with various phenothiazine compounds, but not with perphenazine, include blood dyscrasias (pancytopenia, thrombocytopenic purpura, leukopenia, agranulocytosis, eosinophilia); liver damage (jaundice, biliary stasis); grand mal convulsions; cerebral edema; polyphagia; photophobia; skin pigmentation; and failure of ejaculation. Significant unexplained rise in body temperature may suggest intolerance to perphenazine, in which case discontinue. Antiemetic effect may obscure signs of toxicity due to overdosage of other drugs or make diagnosis of other disorders such as brain tumors or intestinal obstruction difficult. May potentiate the action of central nervous system depressants (opiates, analgesics, antihistamines, barbiturates, alcohol) and atropine. In concurrent therapy with any of these, TRIAVIL should be given in reduced dosage. May also potentiate the action of heat and phosphorous insecticides.

Amitriptyline: Careful observation of all patients recommended. Side effects include drowsiness (may occur within the first few days of therapy); dizziness; nausea; excitement; hypertension; fainting; fine tremor; jitteriness; weakness; headache; heartburn; anorexia; increased perspiration; incoordination; impotence; increased appetite and weight gain; allergic-type reactions manifested by skin rash, swelling of face and tongue, itching; numbness and tingling of limbs, including peripheral neuropathy; activation of latent schizophrenia (however, the perphenazine content may prevent this reaction in some cases); epileptiform seizures; temporary confusion, disturbed concentration, or transient visual hallucinations on high doses; evidence of anticholinergic activity, such as tachycardia, dryness of mouth, stomatitis, blurring of vision, reversible dilatation of the urinary tract, urinary retention, constipation, paralytic ileus; agranulocytosis; jaundice. Elderly patients and adolescents can often be managed on lower dosage levels.

For more detailed information, consult your MSD Representative or see the package circular. Merck Sharp & Dohme, Division of Merck & Co., Inc., West Point, Pa. 19486.

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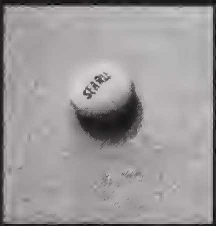

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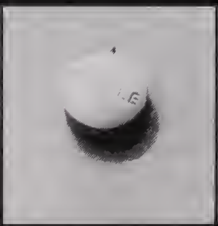

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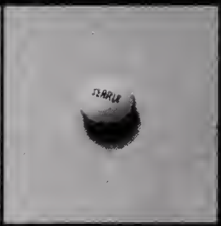

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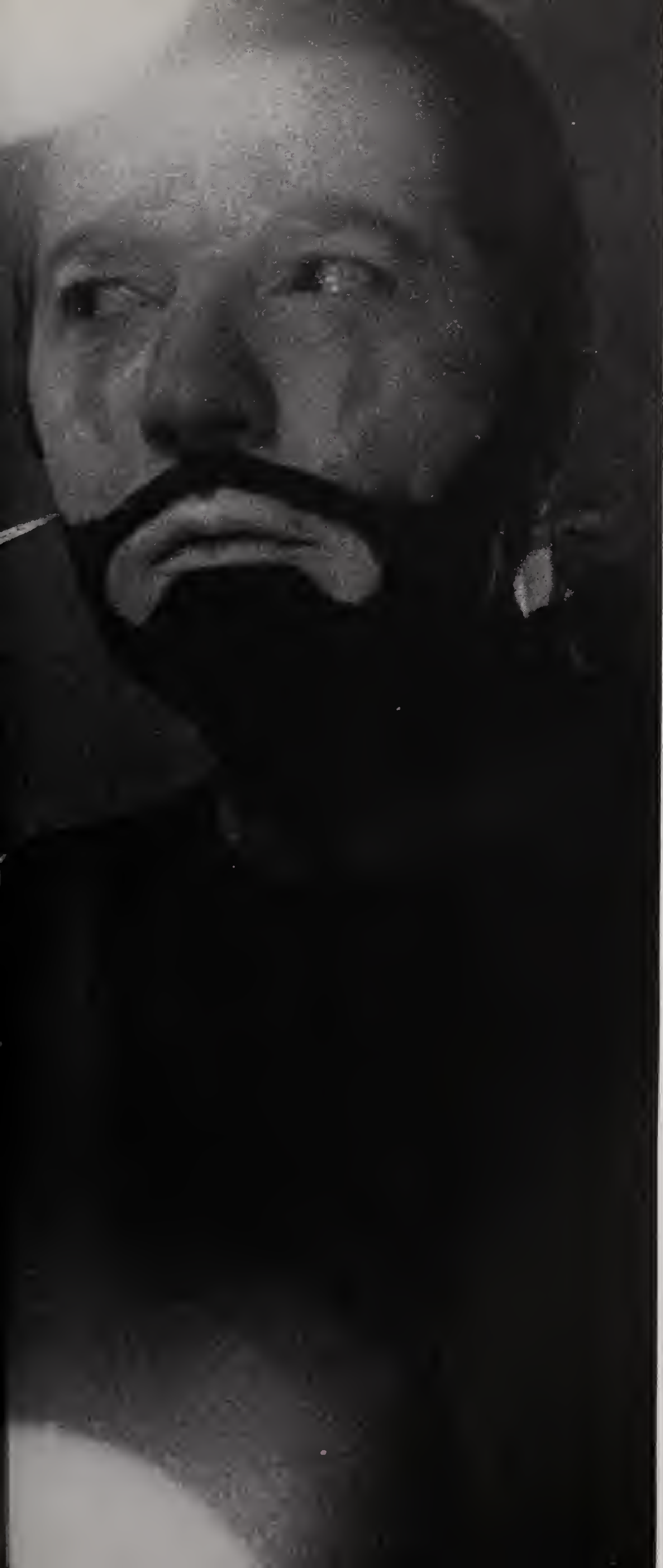
Half Strength



Pro·Banthīne®
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Indications: Peptic ulcer, gastroenteritis, pylorospasm, biliary dyskinesia, functional hypermotility and irritable colon.
Contraindications: Glaucoma, severe cardiac disease.
Precautions: Since varying degrees of urinary hesitancy may occur in elderly men with prostatic hypertrophy, this should be watched for in such patients until they have gained some experience with the drug. Although never reported, theoretically a curare-like action may occur with possible loss of voluntary muscle control. Such patients should receive prompt and continuing artificial respiration until the drug effect has been exhausted.
Side Effects: The more common side effects, in order of incidence, are xerostomia, mydriasis, hesitancy of urination and gastric fullness.
Dosage: The maximal tolerated dosage is usually the most effective. For most adult patients this will be four to six 15-mg. tablets daily in divided doses. In severe conditions as many as two tablets four to six times daily may be required. Pro-Banthīne is supplied as tablets of 15 mg., as prolonged-acting tablets of 30 mg. and, for parenteral use, as serum-type vials of 30 mg. The parenteral dose should be adjusted to the patient's requirement and may be up to 30 mg. or more every six hours, intramuscularly or intravenously.

Pro-Banthīne® 15 mg.
(propantheline bromide)
with
Dartal® 5 mg.
(thiopropazate dihydrochloride)

Indications: Peptic ulcer, spastic constipation, nonspecific gastritis, functional gastrointestinal disorders, pylorospasm, hyperhidrosis, irritable bowel syndrome, mucous or ulcerative colitis, functional diarrhea.
Contraindications: Glaucoma, severe cardiac disease.
Warnings: Pro-Banthīne with Dartal should not be administered to patients who are under the influence of barbiturates, alcohol or narcotics. The drug should be administered cautiously to epileptic patients or those in depressed states, patients with liver disease and to pregnant women. Hypersensitivity to Dartal may occur rarely in patients with known sensitivity to similar drugs.
Side Effects: Dryness of the mouth, mydriasis, hesitancy of urination; less commonly extrapyramidal (restlessness, dystonia and signs of pseudoparkinsonism such as muscular rigidity, fixed facies, tremor, ataxia, festinant gait and drooling), parasympatholytic (blurred vision, xerostomia, hypotension, nasal congestion and constipation) and curare-like (loss of control of voluntary muscles, particularly the muscles of respiration) reactions. Rarely, leukopenia or allergic purpura. A generalized erythematous skin reaction may occur. Side effects characteristic of phenothiazines such as grand mal convulsions, altered cerebrospinal proteins, cerebral edema, potentiation of the effects of atropine, heat or phosphorus insecticides, autonomic reactions, endocrine disturbances, reversed epinephrine effect, hyperpyrexia or pigmentary retinopathy may theoretically occur but have not been reported with Dartal. Severe hypotension following recommended doses occurs more commonly in patients who are also afflicted by other medical disorders such as mitral insufficiency or pheochromocytoma, and particular attention should be paid to such a possibility although this has not been observed with Dartal.
Adult Dosage: One tablet three times a day.

Pro-Banthīne® 15 mg.
(propantheline bromide)
with
Phenobarbital 15 mg.

Warning: May be habit-forming.
For *Indications, Contraindications, Precautions, Side Effects* and *Dosage* see Pro-Banthīne. In addition, phenobarbital should be administered with caution to patients with liver disease, mental disturbances or a significant degree of hypoxia.

Pro-Banthīne P.A.®
prolonged acting brand of propantheline bromide

For *Indications, Contraindications, Precautions* and *Side Effects* see Pro-Banthīne.
Dosage Form: Capsule-shaped, compression-coated, peach tablets of 30 mg. for oral use.
Dosage: The recommended initial dosage is one tablet in the morning and one at night.

084

SEARLE

Research in the service of medicine.
G. D. Searle & Co., Chicago, Ill. 60680

Menrium® treats the menopausal symptoms that bother him most.

Roche
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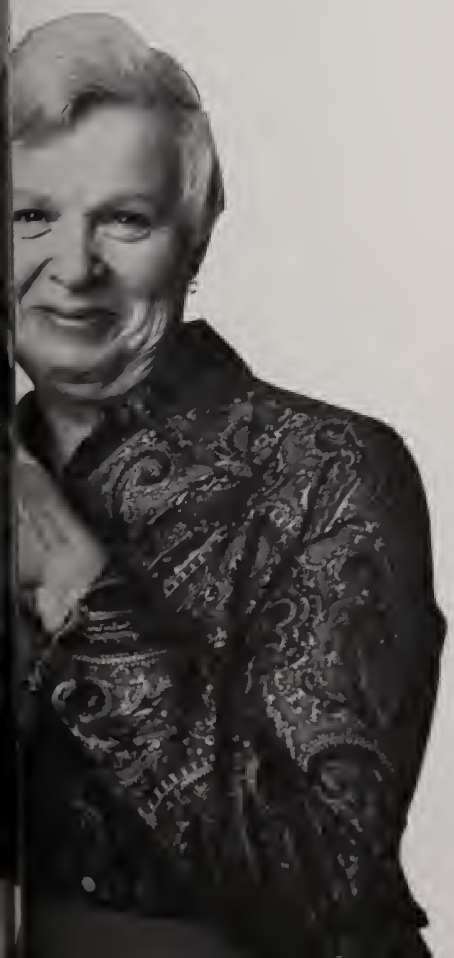
tley, New Jersey 07110

His wife has a lot of different
ıenopausal symptoms, but only a few
ally irritate *him*. Her hot flashes, her
ertigo, her palpitations—that's *her*
roblem. What really bothers him is
er nervousness, her irritability and
er excessive anxiety, often expressed
y endless "book-shuffling, chain-
noking, reading-lamp" insomnia!

Menrium takes care of hot flashes,
ertigo, palpitations in most
ıenopausal women. Menrium
rovides the well-known antianxiety
tion of chlordiazepoxide (Librium®)
nd water-soluble esterified estrogens.
therefore relieves more symptoms
ıan either component separately.
takes care of the vasomotor
mptoms as well as the emotional
mptoms. This means the symptoms
at bother his wife most. And the
mptoms that irritate him most.

So, to help them both get through
r menopause, remember Menrium.



Before prescribing, please consult complete product information, a summary of which follows:

Indications: Management of manifestations generally associated with the menopausal syndrome—anxiety and tension, vasomotor complaints and hormonal deficiency states.

Contraindications: Women with cancer of breast or genitalia, except inoperable cases, and those with known hypersensitivity to chlordiazepoxide and/or esterified estrogens.

Warnings: Caution patients about possible combined effects with alcohol and other CNS depressants. As with all CNS-acting drugs, caution patients against hazardous occupations requiring complete mental alertness (*e.g.*, operating machinery, driving). Exclude other possible causes of menopausal syndrome manifestations, such as pregnancy. Though physical and psychological dependence have rarely been reported on recommended doses, use caution in administering to addiction-prone individuals or those who might increase dosage; withdrawal symptoms (including convulsions) similar to those seen with barbiturates have been reported following discontinuance of chlordiazepoxide HCl. Potential benefits of use in pregnancy, lactation or women of childbearing age should be weighed against possible hazards to mother and child. Clinical data inadequate on safety in pregnancy.

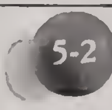
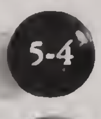
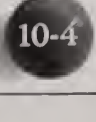
Precautions: In elderly and debilitated patients, limit dosage to smallest effective amount of chlordiazepoxide (initially 10 mg or less per day) to preclude ataxia or oversedation; increase gradually as needed and tolerated. Though generally not recommended, if combination therapy with other psychotropics seems indicated, carefully consider individual pharmacologic effects—particularly in use of potentiating drugs such as MAO inhibitors and phenothiazines. Observe usual precautions in patients with impaired renal or hepatic function. Paradoxical reactions to chlordiazepoxide (*e.g.*, excitement, stimulation and acute rage) have been reported in psychiatric patients. Employ usual precautions in the treatment of anxiety states with evidence of impending depression; suicidal tendencies may be present and protective measures necessary. Variable effects on blood coagulation very rarely reported in patients receiving Librium® (chlordiazepoxide) and oral anticoagulants.

Adverse Reactions: Untoward effects seen with either compound alone may occur with Menrium. With chlordiazepoxide, drowsiness, ataxia and confusion reported in some patients, particularly in the elderly and debilitated; while usually avoided by proper dosage adjustment, these are occasionally observed at lower dosage ranges. Also reported have been a few instances of syncope; isolated occurrences of skin eruptions, edema, minor menstrual irregularities, nausea and constipation, extrapyramidal symptoms, increased and decreased libido, and occasional reports of blood dyscrasias, including agranulocytosis, jaundice and hepatic dysfunction. Periodic blood counts and liver function tests advisable during protracted treatment. Changes in EEG patterns (low-voltage fast activity) observed during and after chlordiazepoxide treatment.

With estrogens, headache, nausea and vomiting, anorexia, gastrointestinal discomfort, dysuria and urinary frequency, jitteriness, breast engorgement, formation of breast cysts, skin rashes and pruritus occasionally seen. Administration may also be associated with uterine bleeding and/or followed by withdrawal bleeding.

Usual Dosage: One tablet t.i.d. for 21 days, followed by one-week rest periods.

Menrium® T.I.D.

5 mg chlordiazepoxide		**0.2 mg water-soluble esterified estrogens**
5 mg chlordiazepoxide		**0.4 mg water-soluble esterified estrogens**
10 mg chlordiazepoxide		**0.4 mg water-soluble esterified estrogens**

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he gas/acid group of disorders

he two most common complaints referable to the upper astrointestinal tract for which patients seek medical relief are yperacidity and 'gas.' The two often occur together."*

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ILAIN-GEL Tablets and Liquid are separate formulas designed to provide quivalent dual-action symptomatic relief. Both dosage forms contain methicone which effectively frees trapped gas, enabling the patient to iminate it. Magnesium hydroxide in both assures a rapid rise in H for prompt relief of hyperacidity. The special co-dried aluminum ydroxide/magnesium carbonate gel in the tablets assures the me rapid and uniform reaction rate as the liquid. Thus, both medications hieve prompt and prolonged neutralization of free acid *plus* prompt lief from the pain and pressure of trapped gas.

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stritis • dyspepsia

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ger, A.: Med. Times 94:150 (Feb.) 1966.

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INDICATIONS: Dimetapp is indicated for symptomatic relief of the allergic manifestations of respiratory illnesses, such as the common cold and bronchial asthma, seasonal allergies, rhinitis, conjunctivitis, and otitis. CONTRAINDICATIONS: Hypersensitivity to antihistamines. Not recommended for use during pregnancy. PRECAUTIONS: Until patient's response has been determined, he should be cautioned against engaging in operations requiring alertness. Administer with care to patients with cardiac or peripheral vascular diseases or hypertension. SIDE EFFECTS: Hypersensitivity reactions including skin rashes, urticaria, hypotension and thrombocytopenia, have been reported on rare occasions. Drowsiness, lassitude, nausea, giddiness, dryness of the mouth, mydriasis, increased irritability or excitement may be encountered. DOSAGE: 1 Extentab morning and evening. SUPPLIED: Bottles of 100 and 500.

A·H·ROBINS
A. H. Robins Company
Richmond, Va. 23220

Dimetapp®
Extentabs

Dimetane® (brompheniramine maleate), 12 mg.; phenylephrine HCl, 15 mg.; phenylpropanolamine HCl, 15 mg.

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(diethylpropion hydrochloride)

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raindications: Concurrently with MAO inhibitors, in patients hypersensitive to rug, in emotionally unstable patients susceptible to drug abuse.

sing: Although generally safer than the amphetamines, use with great caution in nts with severe hypertension or severe cardiovascular disease. Do not use durst trimester of pregnancy unless potential benefits outweigh potential risks.

rse Reactions: Rarely severe enough to require discontinuation of therapy, unant symptoms with diethylpropion hydrochloride have been reported to occur atively low incidence. As is characteristic of sympathomimetic agents, it may sionally cause CNS effects such as insomnia, nervousness, dizziness, anxiety, and jitteriness. In contrast, CNS depression has been reported. In a few epileptics an increase in convulsive episodes has been reported. Sympathomimetic cardiovascular *effects* reported include ones such as tachycardia, precordial pain, arrhythmia, palpitation, and increased blood pressure. One published report described T-wave changes in the ECG of a healthy young male after ingestion of diethylpropion hydrochloride; this was an isolated experience, which has not been reported by others. *Allergic phenomena* reported include such conditions as rash, urticaria, ecchymosis, and erythema. *Gastrointestinal effects* such as diarrhea, constipation, nausea, vomiting, and abdominal discomfort have been reported. Specific reports on the hematopoietic system include two each of bone marrow depression, agranulocytosis, and leukopenia. A variety of miscellaneous adverse reactions have been reported by physicians. These include complaints such as dry mouth, headache, dyspnea, menstrual upset, hair loss, muscle pain, decreased libido, dysuria, and polyuria.

Convenience of two dosage forms: TEPANIL Ten-tab tablets: One 75 mg. tablet daily, swallowed whole, in midmorning (10 a.m.). TEPANIL: One 25 mg. tablet three times daily, one hour before meals. If desired, an additional tablet may be given in midevening to overcome night hunger. Use in children under 12 years of age is not recommended.

T-006A 1/70 / U.S. PATENT NO. 3,001 910

THE NATIONAL DRUG COMPANY
DIVISION OF RICHARDSON MERRELL INC.
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Painful night leg cramps...

unwelcome bedfellow for any patient–
including those with arthritis, diabetes or PVD

One thing patients can sleep without, particularly patients with chronic disease conditions such as arthritis, diabetes or PVD, is painful night leg cramps. Although seldom the presenting complaint, night leg cramps can tie your patients up in painful knots. Now, just one tablet of QUINAMM at bedtime can usually bring an end to shattered sleep and needless suffering. Your patients will sleep restfully—gratefully—with QUINAMM, specific therapy to prevent painful night leg cramps.

Prescribing Information—Composition: Each white, beveled, compressed tablet contains: Quinine sulfate, 260 mg., Aminophylline, 195 mg. **Indications:** For the prevention and treatment of nocturnal and recumbency leg muscle cramps, including those associated with arthritis, diabetes, varicose veins, thrombophlebitis, arteriosclerosis and static foot deformities. **Contraindications:** QUINAMM is contraindicated in pregnancy because of its quinine content. **Precautions/Adverse Reactions:** Aminophylline may produce intestinal cramps in some instances, and quinine may produce symptoms of cinchonism, such as tinnitus, dizziness, and gastrointestinal disturbance. Discontinue use if ringing in the ears, deafness, skin rash, or visual disturbances occur. **Dosage:** One tablet upon retiring. Where necessary, dosage may be increased to one tablet following the evening meal and one tablet upon retiring. **Supplied:** Bottles of 100 and 500 tablets.

THE NATIONAL DRUG COMPANY
DIVISION OF RICHARDSON-MERRELL INC.
PHILADELPHIA, PENNSYLVANIA 19144

Quinamm™
(quinine sulfate 260 mg., aminophylline 195 mg.)

Specific therapy for night leg cramps

in cardiac edema

Dyazide®

Trademark

Each capsule contains 50 mg. of Dyrenium® (brand of triamterene) and 25 mg. of hydrochlorothiazide.

gets the water out

spares the potassium

Before prescribing, see complete prescribing information in SK&F literature or *PDR*.

Indications: Edema associated with congestive heart failure, cirrhosis of the liver, the nephrotic syndrome, late pregnancy; also steroid-induced and idiopathic edema, and edema resistant to other diuretic therapy. 'Dyazide' is also indicated in the treatment of mild to moderate hypertension.

Contraindications: Pre-existing elevated serum potassium. Hypersensitivity to either component. Continued use in progressive renal or hepatic dysfunction or developing hyperkalemia.

Warnings: **Do not use dietary potassium supplements or potassium salts unless hypokalemia develops or dietary potassium intake is markedly impaired.** Enteric-coated potassium salts may cause small bowel stenosis with or without ulceration. Hyperkalemia (>5.4 mEq/L) has been reported in 4% of patients under 60 years, in 12% of patients over 60 years, and in less than 8% of patients overall. Rarely, cases have been associated with cardiac irregularities. Accordingly, **check serum potassium during therapy, particularly in patients with suspected or confirmed renal insufficiency (e.g., certain elderly or diabetics). If hyperkalemia develops, substitute a thiazide alone. If spironolactone is used concomitantly with 'Dyazide', check serum potassium frequently**—they can both cause potassium retention and sometimes hyperkalemia. Two deaths have been reported in patients on such combined therapy (in one, recommended dosage was exceeded; in the other, serum electrolytes were not properly monitored). Observe regularly for possible blood dyscrasias, liver damage or other idiosyncratic reactions. Blood dyscrasias have been reported in patients receiving Dyrenium (triamterene, SK&F). Rarely, leukopenia, thrombocytopenia, agranulocytosis, and aplastic anemia have been reported with the thiazides. Watch for signs of impending coma in acutely ill cirrhotics. Thiazides are reported to cross the placental barrier and appear in breast milk. This may result in fetal or neonatal hyperbilirubinemia, thrombocytopenia, altered carbohydrate metabolism and possibly other adverse reactions that have occurred in the adult. When used during pregnancy or in women who might bear children, weigh potential benefits against possible hazards to fetus.

Precautions: Do periodic serum electrolyte and BUN determinations. Do periodic hematologic studies in cirrhotics with splenomegaly. Antihypertensive effects may be enhanced in postsympathectomy patients. The following may occur: hyperuricemia and gout, reversible nitrogen retention, decreasing alkali reserve with possible metabolic acidosis, hyperglycemia and glycosuria (diabetic insulin requirements may be altered), digitalis intoxication (in hypokalemia). Use cautiously in surgical patients. Concomitant use with antihypertensive agents may result in an additive hypotensive effect.

Adverse Reactions: Muscle cramps, weakness, dizziness, headache, dry mouth; anaphylaxis; rash, urticaria, photosensitivity, purpura, other dermatological conditions; nausea and vomiting (may indicate electrolyte imbalance), diarrhea, constipation, other gastrointestinal disturbances. Rarely, necrotizing vasculitis, paresthesias, icterus, pancreatitis, and xanthopsia have occurred with thiazides alone.

Supplied: Bottles of 100 capsules.

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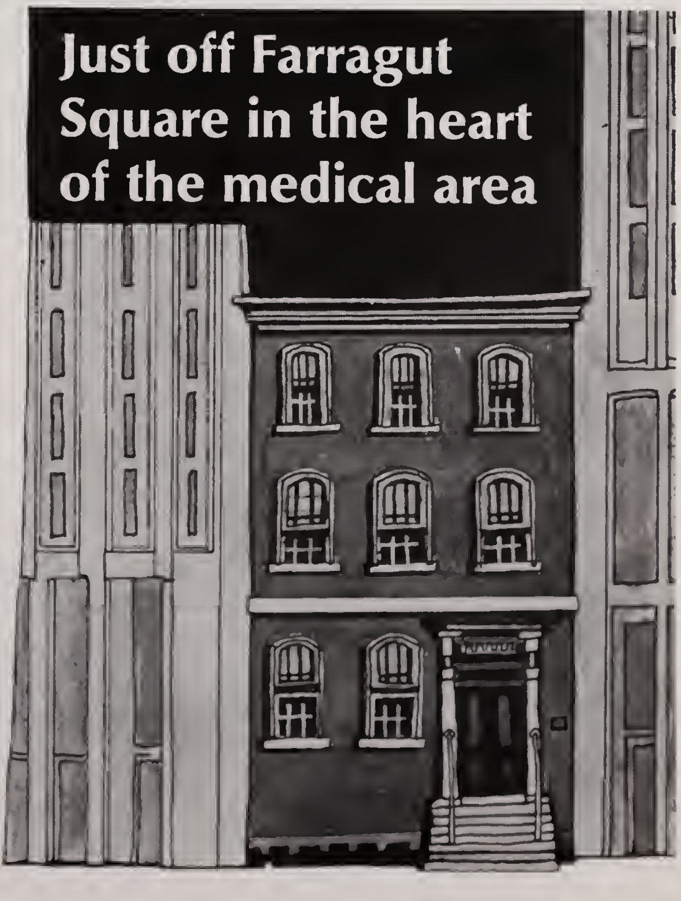
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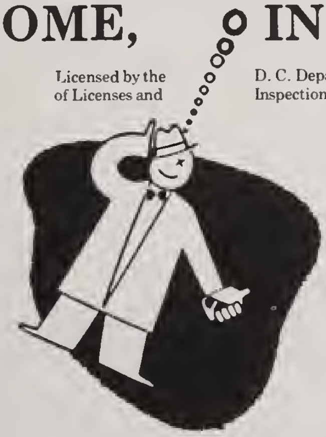

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Contraindication: Hypercalcemia; neoplastic diseases; and fully digitalized patients. Do not use intramuscularly in infants and young children. Before starting therapy, consult complete product literature.

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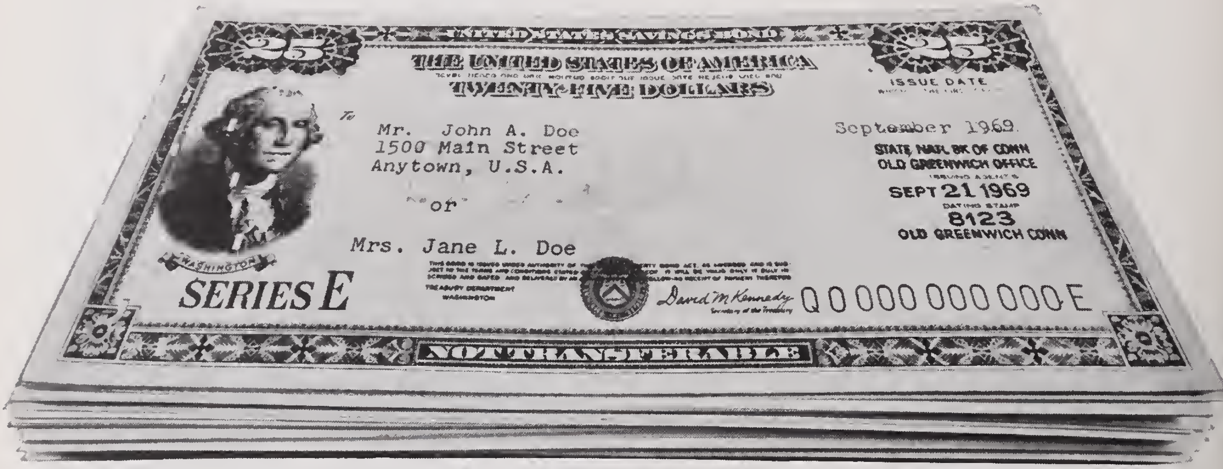

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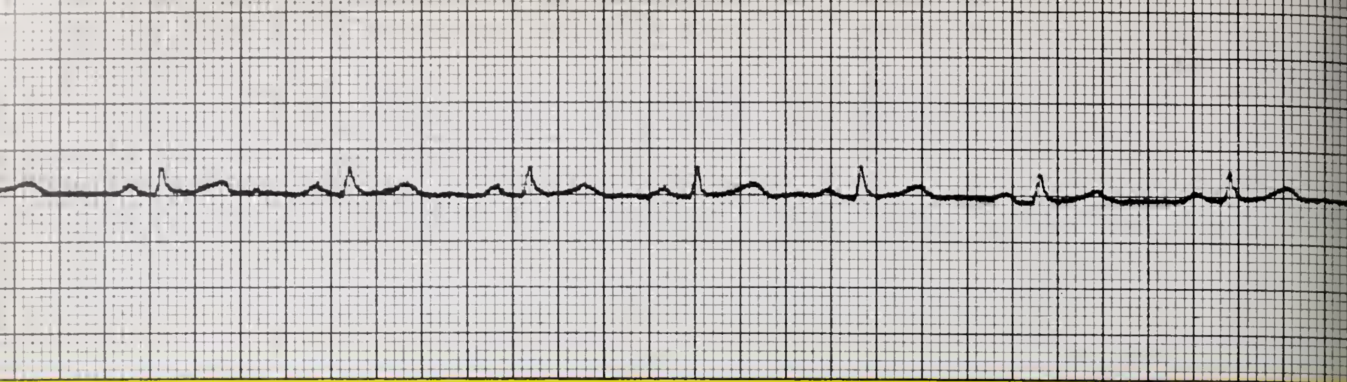

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Precautions: If combined with other psychotropics or anticonvulsants, consider carefully pharmacology of agents employed. Usual precautions indicated in patients severely depressed, or with latent depression, or with suicidal tendencies. Observe usual precautions in impaired renal or hepatic function. Limit dosage to smallest effective amount in elderly and debilitated to preclude ataxia or oversedation.

Side Effects: Drowsiness, confusion, diplopia, hypotension, changes in libido, nausea, fatigue, depression, dysarthria, jaundice, skin rash, ataxia, constipation, headache, incontinence, changes in salivation, slurred speech, tremor, vertigo, urinary retention, blurred vision. Paradoxical reactions such as acute hyperexcited states, anxiety, hallucinations, increased muscle spasticity, insomnia, rage, sleep disturbances, stimulation, have been reported; should these occur, discontinue drug. Isolated reports of neutropenia, jaundice; periodic blood counts and liver function tests advisable during long-term therapy.

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Vaccination Against Pediatric Illness
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Myxomas and Sarcomas of the Heart
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Congenital Heart Disease
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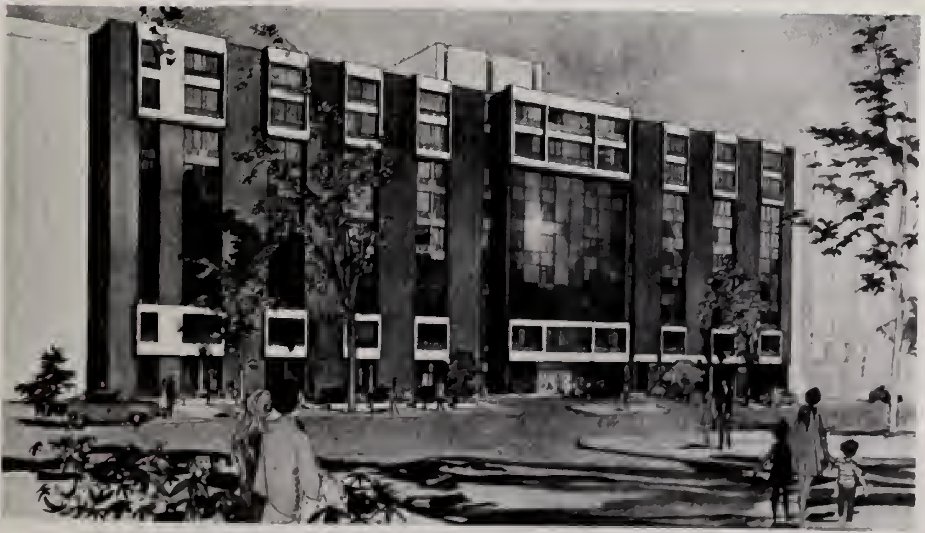

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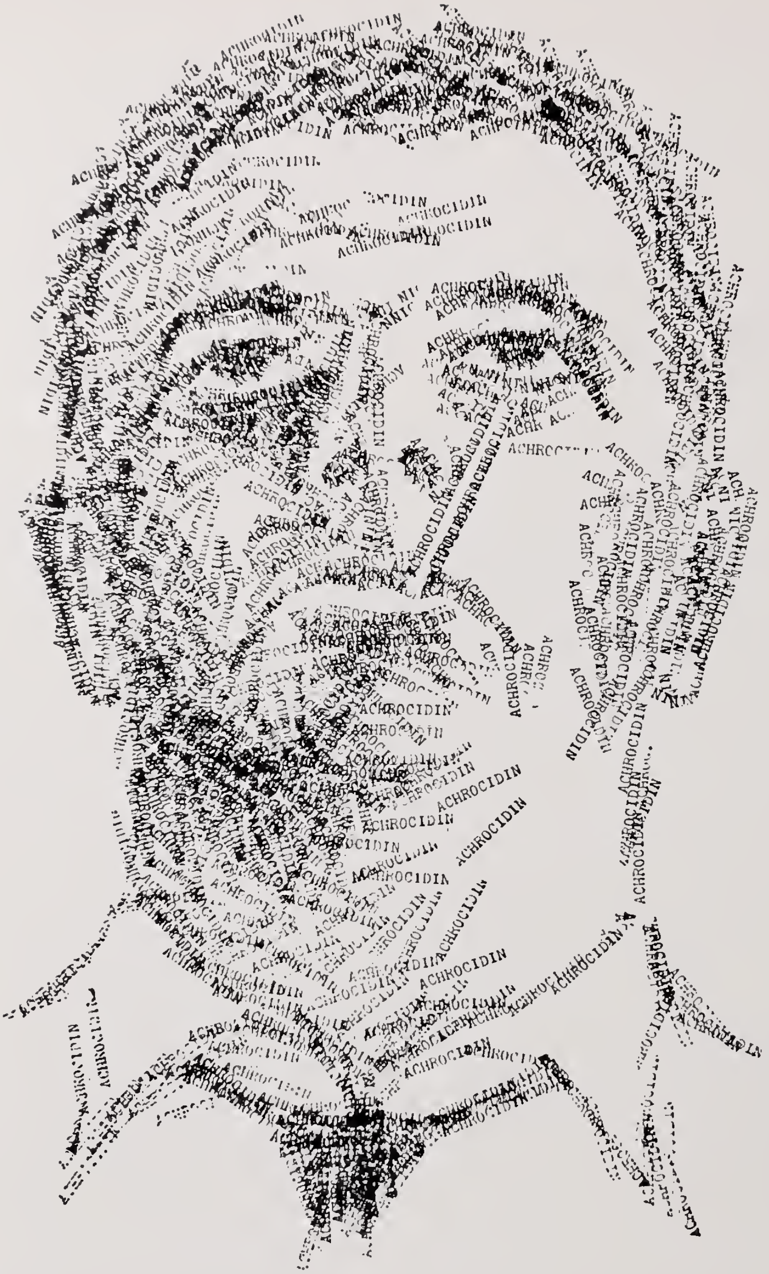

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Precautions: Drowsiness, anorexia, slight gastric distress can occur. In excessive drowsiness, consider longer dosage intervals. Persons on full dosage should not operate vehicles. Nonsusceptible organisms may overgrow; treat superinfection appropriately. Treat beta-hemolytic streptococcal infections at least 10 days to help prevent rheumatic fever or acute glomerulonephritis. Tetracycline may form a stable calcium complex in bone-forming tissue and may cause dental staining during tooth development (last half of pregnancy, neonatal period, infancy, early childhood).
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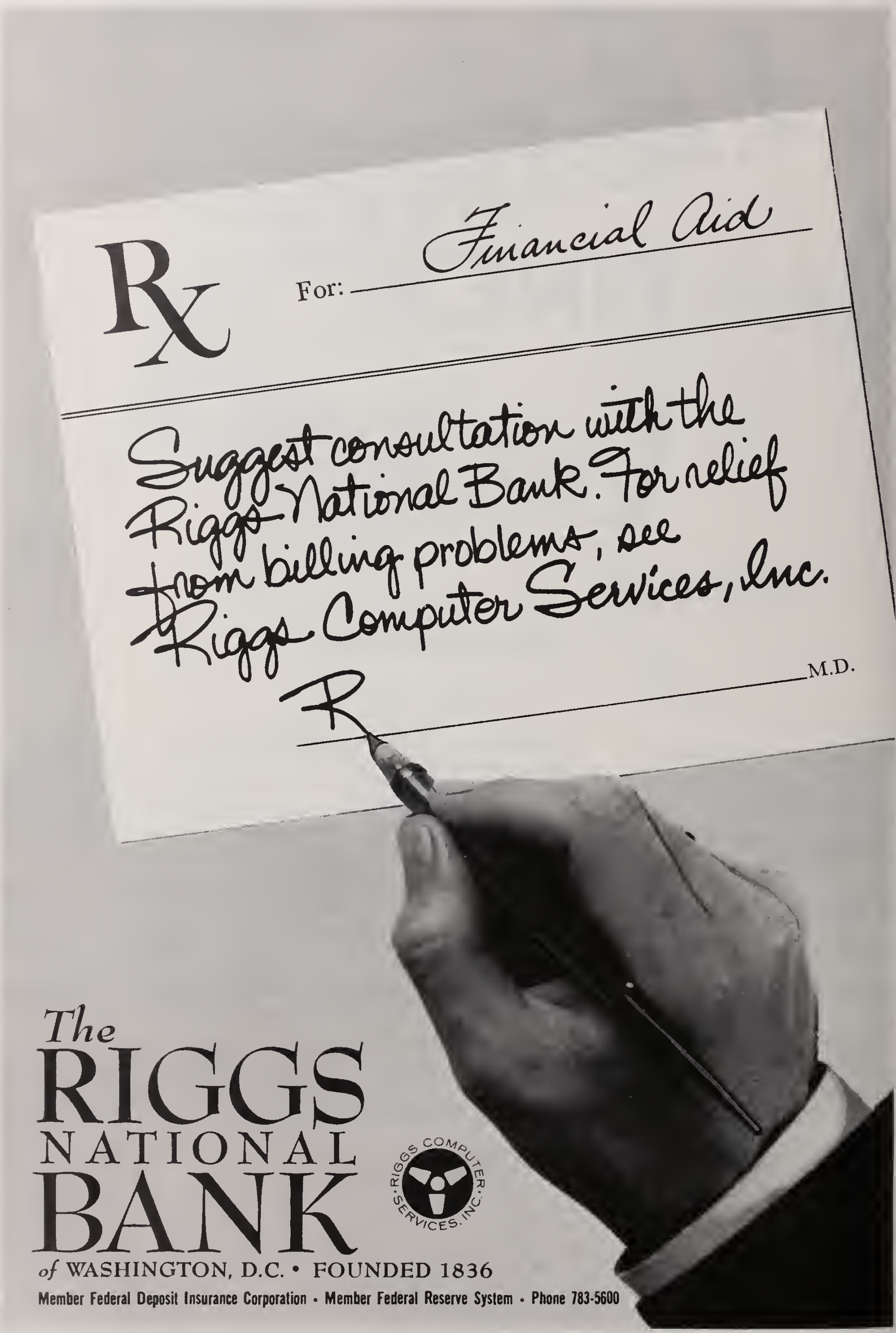
References:
(1) Siver, R. H.: CMD, 21:109, September 1954. (2) Frykman, H. H.: Minn. Med., 38:19-27, January 1955. (3) McGivney, J.: Tex. State Jour. Med., 51:16-18, January 1955. (4) Quehl, T. M.: Jour. of Florida Acad. Gen. Prac., 15:15-16, October 1965. (5) Weekes, D. J.: NY State Jour. Med., 58:2672-2673, August 1958. (6) Ellis, S. and Spratt, J. S.: JOUR. AMER. GER. SOC., 18:410-415, May 1970.



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Precautions: Overgrowth of nonsusceptible organisms may occur. Constant observation is essential. If new infections appear, appropriate measures should be taken. In infants, increased intracranial pressure with bulging fontanels has been observed. All signs and symptoms have disappeared rapidly upon cessation of treatment.

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Yearly Subscription, $8.00
Single Number, 75c

Second-class postage paid at Baltimore, Md.
Published monthly at
Mount Royal and Guilford Avenues.
Baltimore Maryland 21202

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MEDICAL ANNALS
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November 1970

VOLUME XXXIX • NUMBER 11

Cardiovascular Roentgenology: Conventional Studies*

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CARDIAC FLUOROSCOPY and chest roentgenography complement history, physical examination and electrocardiography for the optimal evaluation of patients who have known or suspected cardiovascular disease.

Fluoroscopy is best accomplished with an image intensifier with optical or television monitoring. The major contribution of cardiac fluoroscopy is for the identification of abnormal calcifications, for the detection of abnormal cardiac contractility, and for the analysis of chamber enlargement. Cardiac fluoroscopy also aids in the recognition of pericardial effusion and the analysis of cardiac contractility and great venal pulsation. Diaphragmatic mobility and changes in size of pulmonary nodules or masses when performing the Valsalva and Muller maneuver may be observed via fluoroscopy.

Cardiac fluoroscopy, especially in infants, children and women in the child-bearing age, should be conducted with minimum exposure and maximum patient protection. It is our policy to analyze the chest roentgenograms prior to the fluoroscopic examination. A barium swallow study should be done as part of the fluoroscopic examination. Routine chest roentgenograms for cardiovascular evaluation at our institution includes the following 5 films: (1) Postero-anterior chest roentgenograms without barium, (2) left anterior-oblique view at 45° without barium, (3) right anterior-oblique view at 60° with barium, (4) left lateral view with barium, and (5) postero-anterior view, over-penetrated with barium. Because the heart is a 3-dimensional structure, all of these views are essential for complete evaluation of chamber enlargement.

Overall size of the heart is evaluated by the cardiothoracic ratio, which is the maximum transverse diameter of the heart divided by the maximum internal transverse diameter of the chest. This ratio should be less than 50 per cent, except in extreme obesity, or when the diaphragm is elevated and causes the heart to adopt a horizontal position. Cardiomegaly may be misdiagnosed in the presence of a prominent pericardial fat pad. The latter is easily recognized by the relative translucency observed around the apex of the left ventricle at the left cardiodiaphragmatic junction. A pericardial fat pad may also exist at the right cardiophrenic angle.

In the postero-anterior view the right heart border has 2 arches. The cephalic is the vascular arch caused by the ascending aorta in adults, by the superior vena cava and right lobe of the thymus in infants and young children, or by the superposition of the ascending aorta and the superior vena cava in certain individuals. The caudal arch of the right heart border is formed by the right atrium.

The upper portion of the left-heart border in the frontal projection is formed by the aortic knob (junction of transverse and descending portions of the thoracic aorta). The middle arch is formed by the left border of the pulmonary trunk (upper two-thirds), left auricular appendage (lower one-third), and the proximal portion of the left branch of the pulmonary artery. The caudal arch of the left heart border is formed by the left ventricle.

The left anterior oblique projection separates the left from the right heart chamber. The latter occupies the anterior half of the heart. The posterior heart border is symmetrically convex and appears separated from the left bronchus by a radiolucent area representing aerated lung parenchyma. The anterior half of the heart is occupied by the right atrium superiorly and the right ventricle inferiorly. A line extending the anterior border of the trachea divides the heart in 2 almost equal halves and usually indicates the plane of the interatrial and interventricular septa. The left anterior oblique projection is utilized during selective angiocardiography for the study of left-to-right shunts at the atrial or ventricular levels. Contrast medium injected into any of the left-heart chambers, if seen to be directed anteriorly, indicates the presence of a left-to-right intracardiac shunt. This is also an excellent view for evaluating valvular, subvalvular, or supravalvular aortic pathology. The left anterior oblique projection unfolds the thoracic aorta. Left ventricular outflow tract obstructions are best analyzed in this projection. This is the projection of choice for selective injection of the right and left coronary arteries. The right coronary artery is directed anteriorly and the left coronary artery posteriorly. The anterior descending division of the left coronary artery crosses the mass of the heart in the left anterior oblique projection.

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* Submitted to the MEDICAL ANNALS by the Washington Heart Association.

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The right anterior oblique projection is the view that separates the atria from the ventricles. The right anterior oblique projection should be taken at 60°. The reason for this is that it requires this degree of rotation of the patient in order to separate the heart from the spine. The left and right atrium are projected posteriorly, and the right and left ventricle are superimposed anteriorly. This view is most important in selective ventriculography for the evaluation of pathology of the atrioventricular valves. It is also a very important view for the evaluation of atrial enlargement.

The left lateral view of the heart separates the left atrium and left ventricle posteriorly from the right ventricle and right atrium anteriorly. In the lateral projection of the heart, on deep inspiration one usually sees a vertical line crossing the angle formed by the posterior heart border (diaphragmatic portion of the left ventricle) and the left leaf of the diaphragm. This line corresponds to the posterior wall of the inferior vena cava. When the posterior heart border projects dorsal to the caval line this usually is indicative of left ventricular enlargement. The left lateral projection is of importance for the evaluation of heart size in the ventro-dorsal direction; for the evaluation of left atrial, left ventricular and right ventricular enlargement; for the diagnosis of obstructive airway disease (i.e., diffuse obstructive pulmonary emphysema); and for the recognition of thoracic-wall deformities, such as sternal depression and the so-called straight-back syndrome. This is an excellent view for the analysis of the size of the primary divisions of the pulmonary artery. The right pulmonary artery usually projects as an oval shadow just caudal and ventral to the tracheal bifurcation. The left pulmonary artery courses above and dorsal to the left bronchus.

The overexposed frontal view of the heart is of value for the recognition of abnormal cardiac calcification, the detection of an enlarged left atrium, the best localization of the thoracic aorta, and the analysis of esophagus-heart relationship. The postero-anterior view of the heart is used for the evaluation of heart size in the frontal plane and of cardiovascular configurations. The heart is said to have an "aortic or left ventricle configuration" when the left ventricular arch and the aortic knob are prominent. This determines relative narrowing of the waist of the heart (relative concavity of the middle arch of the left-heart border). The "mitral configuration" is said to be present when the shadow of the aortic knob is small, the middle arch of the left-heart border appears to be straight or convex, and the left ventricular arch is inconspicuous. The left-heart border follows a straight line directed from midline to the left hemidiaphragm. A double density caused by left atrial enlargement and inversion of the pulmonary vasculature (upper, medial pulmonary vessels appear larger than lower medial pulmonary vessels) complete the picture of the "mitral cardiovascular configuration". The "left-to-right shunt configuration" is said to be present when there is marked convexity of the middle arch of the left-heart border and uniform pulmonary vascular plethora. "Fallot configuration" is said to be present when there is prominent rounding of the left ventricular border which appears raised above the diaphragm, the middle arch of the left-heart border appears concave, and the shadow of the aortic knob is barely visible. This heart configuration is usually associated with pulmonary hypovascularity (secondary to right-to-left shunt). This group of findings is not pathognomonic of Fallot's tetralogy. It may be seen with other anomalies such as tricuspid atresia and persistent truncus arteriosus. The so-called "water bottle configuration" is said to be present when the right and left heart borders appear rather symmetric. There is enlargement of the transverse diameter of the heart. The pulmonary vasculature appears to be normal or decreased. This configuration is the consequence of massive pericardial effusion and of cardiac dilatation (primary and secondary myocardiopathies).

Of all the heart chambers, the left atrium is the easiest to analyze. It is the most posterior chamber of the heart and hence contacts the esophagus. When the left atrium is enlarged, in the frontal projection one may see slight convexity of the lower third of the middle arch of the left heart border due to dilatation of the left auricular appendage. A disc-like density appears in the center of the heart and causes a double density on the right heart border and occasionally accounts for a third arch at the right-heart border (the middle one). The interbronchial angle may appear to be widened (greater than 70°) when enlargement of the left atrium is directed superiorly. In extreme left atriomegaly the esophagus may appear displaced to the right or to the left of the midline. Rarely, one may see atelectasis of the left lower lobe secondary to obstruction of the left lower lobe bronchus from a markedly enlarged left atrium.

In the left anterior oblique projection the enlarged left atrium will obliterate the clear infrabronchial space. One may see elevation of the left main bronchus. In the right anterior oblique projection the esophagus will no longer parallel the thoracic spine. Variable degrees of esophageal displacement may be encountered. Elongated marked esophageal displacement indicates marked left atrial enlargement usually seen with severe degrees of mitral insufficiency. Localized, slight esophageal displacement indicates mild left atrial enlargement and predominant mitral stenosis.

Right atrial enlargement is best evaluated in the left anterior oblique projection. Prominence of the superior aspect of the anterior heart border usually reflects enlargement of the right auricular appendage. In the frontal projection the right atrial border may appear displaced to the right and cephalad. There may be cephalic displacement of point B (junction of the right atrial border and the vascular arch). The right anterior oblique and left lateral projections are not helpful for the evaluation of right atrial enlargement.

Enlargement of both ventricles will displace the apex of the heart caudally and toward the left. However, enlargement of the right ventricle is suspected with convexity of the middle arch of the left heart border. Since the right ventricle is not a border-forming structure in the frontal projection, indirect evidence of right ventricular pathology is suspected whenever one observes convexity of the middle arch of the left-heart border and abnormal pulmonary vascularity. Pulmonary valvular stenosis, left-to-right shunts and pulmonary arterial hypertension are the most common causes of convexity of the middle arch of the left-heart border. Rarely, the ascending aorta may occupy the middle arch of the left-heart border (in corrected transposition of the great arteries, for example). In some instances abnormal convexity of the middle arch of the left-heart border is related to herniation of the left auricular appendage through a partial pericardial defect or to a non-vascular condition such as an enlarged thymus, tumor, adenopathy, etc.

The left lateral projection of the heart provides for the best profile analysis of the right ventricle. The closeness of the anterior heart-border to the sternum s not a good sign of right ventricular enlargement. In patients with a narrowed anteroposterior diameter of he chest the heart is close to or contacts the sternum. The left and right anterior oblique projections are not informative for the evaluation of right ventricular enlargement.

The best view for evaluating left ventricular enlargement is the left anterior oblique projection. In this view when the left ventricle is enlarged it usually overlaps and may project beyond the thoracic spine. The angle formed between the left ventricle and the left hemidiaphragm may become obtuse. The right anterior oblique projection is not useful for evaluating left ventricular enlargment. In the frontal projection the shape of the left ventricular arch may reflect volume (broad large arch) and pressure (rounding, short arch) hypertrophy.

Pressure hypertrophy of either ventricle may be radiographically silent. Physical findings and electrocardiography are usually more sensitive than conventional roentgenography for the establishment of right or left ventricular hypertrophy. However, volume hypertrophy of either ventricle modifies heart size and configuration and will exaggerate the convexity of these chambers.

Asymmetric enlargement of the ascending aorta may be seen with aortic valvular stenosis (post-stenotic dilatation) and with syphilis. When the aorta becomes dilated and tortuous the desending aorta may project beyond the middle arch of the left-heart border. In such instances the right superior mediastinum may show a convex density usually caused by a tortuous dilated and/or displaced innominate artery. Arteriosclerosis dilates and at the same time elongates the thoracic aorta. As the thoracic aorta has a fixed position at the level of the aortic valve and at the aortic hiatus of the diaphragm, elongation will occur and will displace the aorta anteriorly, cephalically toward the right, and dorsally beyond the thoracic spine. Analysis of calcification at the level of the thoracic aorta is important. Dissecting hematoma and lues (with asending aorta calcification) cause characteristic findings. Pericardial, coronary artery and valvular calcification are best analyzed at fluroscopy. The best view to separate mitral from aortic valvular calcification is the left anterior oblique view. Aortic valvular calcification will project in the center of the heart and will have a cephalocaudal (head-foot) motion. Mitral valvular calcification will project in the posterior third quadrant of the heart and will have a reverse C-shaped motion.

Vaccination against Pediatric Illness Caused by Parainfluenza Virus, Respiratory Syncytial Virus and Certain Adenoviruses Current Status and Perspective*

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A RELATIVELY CLEAR PICTURE of the etiologic significance and relative contribution to respiratory-tract disease of various non-bacterial agents has emerged. In childhood respiratory-tract disease, respiratory syncytial (RS) virus, the parainfluenza viruses, and the adenoviruses play a major part, while influenza, certain picorna viruses, particularly the rhinoviruses and *Mycoplasma pneumoniae* play a less important role. Among the adenoviruses, types 1, 2, 3 and 5 primarily affect children, whereas types 4 and 7 especially affect military recruits. A potential pediatric immune prophylactic program would now give priority to the RS virus, parainfluenza virus types 1, 2 and 3 and, to a lesser extent, certain of the adenoviruses and *Mycoplasma pneumoniae*.

All of these agents may initiate a relatively indistinct respiratory tract response. On the other hand, parainfluenza virus types 1, 2 and 3 seem to be responsible for a majority of the cases of infectious croup, while RS virus seems clearly to be the major cause of bronchiolitic-bronchopneumonia.

Parainfluenza Virus Vaccines

Since there had been no genetic markers or animal hosts for indicating virulence and possible attenuation of the parainfluenza and RS viruses, early efforts were directed toward the development of inactivated vaccines. Several years ago we had the opportunity to test the antigenicity and immunogenicity in infants of a variety of inactivated potential vaccines directed against parainfluenza virus types 1, 2 and 3.[1] We concentrated our studies on response to vaccines given by intramuscular injections during the first 12 months of life, since primary infection and severe illness occur commonly during this period. An inactivated, aqueous, formalin-treated preparation of parainfluenza types 1, 2 and 3 viruses which were grown in embryonated hen eggs seemed to have the most predictable antigenicity, stimulating a 4-fold or greater rise in serum antibody in 90 to 100 per cent of the infants who received the antigen. A trivalent vaccine preparation of egg-grown parainfluenza types 1, 2 and 3 antigen later produced similar results with respect to serum antibody.

Unfortunately, in most studies the antibody induced by these inactivated vaccines did not protect against illness. Apparently inactivated parainfluenza vaccines must be produced which will induce greater levels of serum antibody, or some method must be developed whereby antigens can be used to stimulate antibody in respiratory-tract secretions. It appears that respiratory-tract antibody rather than serum antibody is of signal importance in the prevention of parainfluenza virus infection. The most direct evidence for this reasoning comes from studies with young adult human volunteers who were given parainfluenza type 1.[2] Parainfluenza vaccine development, therefore, is now being directed toward 2 goals: first, the acquisition of more information on the importance of local antibody; and second, the derivation and testing of strains of attenuated virus or possibly killed vaccines which can be administered directly into the respiratory-tract to produce local antibody.[3]

Respiratory Syncytial Virus Vaccines

The RS virus is the single most important respiratory tract pathogen for infants and children. An effective pediatric vaccine against this agent could be expected to produce a significant reduction in lower

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* These studies supported in part by National Institute of Allergy and Infectious Diseases Contract No. PH-43-62-473 and Grant No. AI01528-14.

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respiratory-tract morbidity and hospitalization among infants and children. As with the parainfluenza viruses, initial efforts at immune prophylaxis against RS virus were concentrated primarily on the development of an inactivated vaccine. For example, we studied the antigenicity and immunogenicity of an alum-precipitated, 100X concentrated, formalin-inactivated RS virus vaccine which had been prepared from the Burnett strain and grown in vervet monkey kidney tissue culture.[4] This preparation was administered to infants between 2 and 7 months of age. Vaccines against parainfluenza viruses prepared in a similar manner were administered to a control group of infants who were otherwise comparable in age, socio-economic status, and location of residence.

All of the RS vaccinees had detectable serum antibody at the end of the vaccination period, and their geometric mean titer was very high—6 times that of the parainfluenza virus vaccinees. The efficacy of the RS vaccine against infection and illness was then studied during the subsequent several years, particularly during the RS virus epidemics of 1966 and 1967. Sixty-five per cent of the children who had received the RS inactivated vaccine showed serologic evidence of having become infected with RS virus during these epidemics, as compared with 53 per cent of all the infants who had received 1 of the parainfluenza virus vaccines. The rate of infection in the RS vaccinees was, therefore, not significantly different from their controls. However, when natural RS infection and illness occurred, 80 per cent of the RS vaccinees required hospitalization at the time of infection. By contrast, only 5 per cent of RS infections among parainfluenza virus vaccinees resulted in admission to the hospital.

From these findings it seems clear that the infants who received the inactivated, concentrated, alum-precipitated respiratory syncytial virus vaccine not only were not protected against infection, but paradoxically experienced an altered, exaggerated clinical response when natural RS infection occurred. These findings were entirely unexpected. We now think that administration of the inactivated RS vaccine was responsible for the exaggerated illness caused by RS virus infection. We lack a definite explanation for this phenomenon, except to say that the vaccine in some way altered the host response to natural RS infection. This phenomenon presumably is similar to the "paradoxical" vaccine effect which has been reported with parenterally administered rickettsial vaccines, trachoma vaccine, *Mycoplasma pneumoniae* vaccine, and more recently with inactivated measles vaccine.

Since RS serum neutralizing antibody does not protect against infection or illness, we are now focusing attention on the potential role of respiratory-tract secretory antibody. An understanding of the natural history of nasal secretory antibody in RS virus infection should clarify certain aspects of the pathogenesis of RS illness and provide a sounder basis for its prevention. Accordingly, in 1 study we obtained serum and nasal secretions from infants and children in whom there was reasonable clinical suspicion that their illness might be due to RS virus infection.[5]

During the study interval, paired acute and convalescent-phase nasal secretions which contained sufficient IgA for the determination of RS virus neutralizing activity were available from 17 patients, 2 to 40 months of age, in whom RS virus infection was detected.

An approximate 4-fold or greater rise in nasal secretory neutralizing activity developed during convalescence in 7 of the 17 patients infected with RS virus. Three patients also showed a 3-fold or greater fall in such activity. In some infants there was an elevated level at the time of acute illness, and there were instances of a fall in antibody a short time following illness; together, these findings suggest that nasal antibody increases early in infection and also rapidly declines.

In another study, appropriate specimens were collected from a group of infants before and after a period of RS virus prevalence. The infants were also studied at the time of illness, if any occurred. A rise in nasal RS antibody occurred most often (70 per cent) among those infants who were ill and from whom RS virus was recovered. A rise in nasal antibody occurred least often (14 to 18 per cent) among those who were ill and from whom RS virus was not recovered, or among those who were not ill whether or not there was other evidence of RS virus infection.

More recently we have studied the immunogenicity of the attenuated A2 strain of RS virus which had been cultured for 5 passages in human embryonic kidney tissue culture and subsequently passaged 52 times in embryonic bovine kidney tissue culture, the last 16 passages at 26°C. This virus was safety tested and administered to 45 young adults before administration to children. No untoward effects or illness occurred in the adults. Nine of the 45 adults were infected but none responded with the cold-like illness produced in adults who received the A2 strain prior to its passage at low temperature. The potential vaccine was administered into the nose by pipette and into the pharynx by coarse spray to 2 children at a time, and the children were then observed under isolation precautions for several weeks.

None of 34 children who received the RS A2 vaccine showed any untoward reaction or illness associated with the administration of the vaccine. The vaccine strain was recovered from 17 of the 34 children. Nine of these 17 children showed a 3-fold or greater rise in nasal secretion antibody to RS virus. In addition, 1 child from whom virus was not recovered showed a 4-fold rise, and 3 others showed a 3-fold rise in nasal neutralizing antibody. In total, 21 of the 34 children showed some evidence of having been infected with the vaccine strain. The rate of infection was somewhat greater, as evidenced by virus recovery, in the younger children 2 to 6 years of age than in the children aged 7 to 13 years.

The major goals of a vaccine against RS virus infection would be to induce sufficient antibody in infants prior to their first natural infection or to enhance a rapid response of local antibody during natural infection. Accordingly, we proceeded to administer the RS A2 cold-adapted vaccine to 5 infants and children under the age of 2 years. This group included children 6 months to 17 months of age. At least some of such children would be expected never previously to have encountered RS virus infection. In fact, the 3 youngest infants had no serum antibody against RS virus. All of the 5 shed vaccine virus; thus all were infected. Unfortunately, 2 of the 3 youngest also had mild fever and rhinitis at the time of virus shedding. Both showed otitis and 1 had bronchitis. If these findings were due to vaccine virus, and they apparently were, since so far no other etiologic agent has been found and the symptoms occurred during the period of virus shedding, then this would not be an acceptable vaccine. As a result, we have discontinued studies of this vaccine strain.

Despite a lack of success with the first experimental live virus RS vaccine, the above studies confirm that changes in nasal secretory antibody do occur during clinical illness and that an attenuated vaccine can induce such changes. The only way to prove the thesis that artificial stimulation of nasal secretory antibody would prevent serious disease is to find an acceptable antigen for use in infants and to set up appropriate clinical studies. Toward this goal, several investigators are attempting to select or produce mutant temperature-sensitive strains, e.g., strains which will grow at the temperature of the respiratory tract epithelium but will not grow above 37°C.[6] Such strains offer the promise of limited and controlled multiplication which should minimize any possible illness following their administration.

Adenovirus Vaccines

Adenoviruses of a limited number of types produce significant respiratory-tract illness in children.[7] Generally the adenoviruses produce only a febrile upper respiratory-tract illness with pharyngitis, but pharyngo-conjunctival fever and pneumonia can result. Adenovirus types 4 and 7 which produce considerable illness in military recruits were prototypes for an inactivated vaccine.[8] Such a vaccine was developed almost a decade ago and was used extensively in the U.S. military until it was found to contain a simian virus as well as an adenovirus which were both oncogenic for hamsters. Also, adenovirus types 1, 2 and 5, the prime strains producing infection during childhood, were not sufficiently antigenic in an inactivated vaccine.

At least 2 new approaches are promising. For example, the administration by the feeding of enteric-coated type 4 or 7 has resulted in infection and significant protection against the type administered without the production of illness. Although not yet licensed, these vaccines show promise for extensive use in the U.S. military. Similar materials for the childhood type of adenoviruses are being prepared, and exploratory clinical studies will begin shortly. A key question: Will it be as safe to administer enteric-coated live adenoviruses to infants and children by mouth as it is with young adults? Another possible approach to protection against the adenoviruses is the use of purified non-living antigens either parenterally or intranasally.[9] There is every reason to believe that these approaches will produce an effective adenovirus vaccine within a few years. Although it is certain that the military would wish to use an adenovirus vaccine against types 4 and 7, there might be some questions as to the need and acceptability of an adenovirus vaccine against the childhood types. Although higher priority should be placed on vaccines against parainfluenza and RS viruses, an effective adenovirus vaccine against types 1, 2, 3 and 5 administered in infancy could be expected to prevent 5 to 7 per cent of pediatric respiratory-tract disease including possibly 9 per cent of cases of pediatric pneumonia.

Conclusions

With respect to the prevention of pediatric respiratory disease, respiratory syncytial virus, parainfluenza types 1, 2 and 3, and possibly also adenovirus types 1, 2, and 5 and *Mycoplasma pneumoniae* should receive priority for vaccine development. Systemically administered killed vaccines seem not to be a viable approach to prevention of disease induced by parainfluenza and respiratory syncytial viruses. Current research is directed toward administration of attenuated strains of these agents via the respiratory tract to produce local antibody. With the adenoviruses, the feeding of appropriate types in enteric-coated capsules or the administration of purified antigens may be useful approaches to pediatric immunization.

(Continued on page 627)

Myxomas and Primary Sarcomas of the Heart

LOUIS E. MARK, M.D.*

OVER THE LAST 2 DECADES investigations have brought to the fore a wealth of information concerning the pathophysiology of cardiac neoplasms, especially those of primary origin. The problem has been defined to the point that nowadays such tumors can be diagnosed antemortem and successfully treated by surgical means. Too many cases of cardiac tumors, however, are still being diagnosed on postmortem examination alone, a fact which underscores the basic complexity of their presentation to the clinician. Metastatic tumor involvement of the heart is more easily recognizable than primary involvement because the cardiovascular changes wrought by such tumors usually follow, or are at least coincident with the changes in the system initially affected. Secondary tumors of the heart, moreover, are far more common than primary tumors.

The differential diagnosis of primary cardiac tumors remains, for the most part, extremely difficult due largely to the great imitative character of these lesions. The signs and symptoms are multiple and varied and often focus the attention of the physician away from the heart. Only by considering the possibility of their presence and then correlating the clinical picture with the known dysfunctions that these tumors are capable of producing, will the diagnosis of primary cardiac tumor be made. The following is an attempt to describe the 2 most common primary neoplasms of the heart, myxoma and sarcoma. Although they are extremely rare, a high index of suspicion as to their presence should be maintained.

Cardiac and pericardial tumors in general are most easily divided into primary and secondary, benign and malignant. Benign primary lesions include myxomas, fibromas, angiomas, lipomas, hamartomas, teratomas, leiomyomas, and mesotheliomas. Malignant primary tumors are most commonly sarcomas. Secondary metastatic tumors include carcinomas, sarcomas, lymphomas, melanomas, and leukemias.

Incidence

The incidence of primary tumors of the heart is extremely low. One English pathologist saw only 1 during a 10-year span in which he performed 3,914 autopsies. An earlier series reported an incidence of 0.0017 per cent in autopsies performed during the period 1938-42. The figure of 0.03 per cent represents the findings of such tumors in another series of 40,000 autopsies.[1] By 1964 at least 531 cases of myxoma, the most common of the benign primary tumors, had been reported.[2] In contrast, metastatic tumors to the heart have been described in 0.1 to 6.4 per cent of unselected autopsies, and in 1.5 to 20.6 per cent of patients dying of malignancy. The recent increased frequency of diagnosis of secondary cardiac tumors reflects both a greater interest in the problem and the longer life span of cancer patients today.[3]

The rarity of cancer of the heart is explained by consideration of the relative size of the organ, which is only 0.4-0.5 per cent of body weight. It is well known that there is little, if any, mitotic activity in heart muscle and that damage to the heart causes degenerative rather than regenerative changes. Tumors of this organ might be expected to occur in numbers bearing a similar relationship as its weight. Other considerations for the low incidence include the strong kneading action of the heart, the metabolic peculiarities of cardiac muscle, the rapid intracardiac blood flow, and the restricted cardiac lymphatics.[3] Once established, however, the relationship between neoplastic tissue and heart tissue appears to be that of symbiosis. Myocardial metabolism is aerobic, requiring lactic acid and extracting little glucose from the blood, whereas tumor metabolism is highly anaerobic, requiring glucose and little oxygen, and producing lactate.[4]

Myxomas

Despite its rarity, the left atrial myxoma is 1 of the commonest cardiac tumors of primary origin and 1 of the few of the which the patient can be cured by surgery. It has been given the greatest amount of attention in the literature and has become the prototype of the various physiologic, anatomic, biochemical, and hematologic disturbances that may result from an intracavitary mass. It was first diagnosed by angiocardiography in 1951, and in 1954 Crafoord removed the first myxoma. From many points of view it is the most interesting of cardiac tumors.

More than three-fourths of all primary tumors are benign. Myxomas constitute 35 to 50 per cent of these primary tumors and are the most common intracavitary tumor. They occur at all ages but are most prevalent in persons 30 to 60 years old. They are reported to have both an equal and a female-dominant sex distribution.[5] About 75 per cent of myxomas occur in the left atrium. In Manion's study of 531 myxomas, 397 were in the left atrium, 86 in the right atrium, 10 in both atria, 9 in the right ventricle, 7 in the left ventricle, and 22 in locations not reported.[2] They are usually solitary and intracavitary, although multiple tumors have been known to occur. Almost all are attached by a pedicle to the fossa ovalis or its rim. Eighty per cent are described as polypoid, ranging in size from 0.4 to 8.0 cm. Their consistency has been described as gelatinous, soft, and rubbery, and their friability causes them to produce embolic phenomena. Rarely they have a sessile attachment. The distinction between ball thrombi and smooth ovoid myxomas is difficult grossly, but the presence of a laminated pedicle is common in the former and never found in the latter (figure 1).[1]

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Some authorities have regarded the cardiac myxoma as an endothelioma. There is no doubt that pathologically "cardiac myxoma" is a misnomer, but the histology is quite distinct from that of a thrombus and suggests that the myxoma is a true neoplasm. Certain histologic features, however, are of no value in distinguishing myxomas from thrombi since they occur in both lesions and because thrombi may occur on the surface of such tumors.

Clinical Features of Myxomas

Clinically, myxomas manifest themselves in 3 ways: by embolization, by obstruction to blood flow, and by constitutional effects, that is, by producing symptoms and signs of a constitutional nature as well as changes in the blood which can be detected by hematologic and biochemical examination.

Obstruction to blood flow. Because most myxomas are pedunculated they will, if large enough, intermittently cause obstruction of the atrioventricular valves, thereby simulating rheumatic heart disease. Many myxomas never achieve sufficient size to cause such obstruction and thus remain asymptomatic. On the other hand, the fact that they are generally progressive in their obstructive phenomena has given rise to the statement that myxomas are "pathologically benign but clinically malignant."[6] Often the tumor will float back and forth between artrium and ventricle and, in cases in which it is calcified rather than pliant, it virtually destroys the mitral valve by what has come to be called the "wrecking ball" effect, popularized by Harvey.[7] This mechanism gives

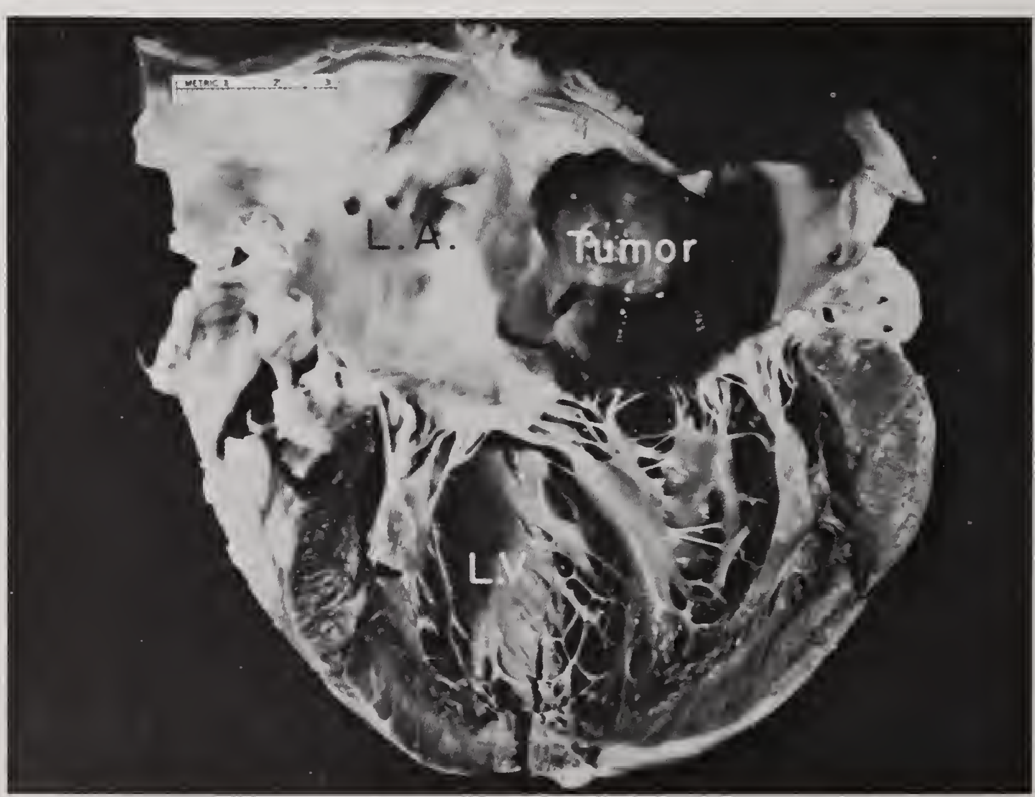

FIG. 1. Left atrial myxoma found incidentally in a 54-year-old man with bronchogenic carcinoma. There was no definite cardiomegaly, and no intracardiac calcification was seen on X-ray. (Courtesy of Dr. W. P. Harvey.)

rise to diastolic murmurs characteristic of mitral or tricuspid stenosis and, if valve closure is prevented by the tumor, systolic regurgitant murmurs are also heard. In fact, if the tumor is calcified (indicating significant age) and on the right side, it appears that tricuspid insufficiency rather than stenosis is the predominant hemodynamic disturbance.[8] Typically, murmurs produced by intracardiac tumors will change quality with time and body movement, but in a manner unlike the variation found in mitral stenosis.

Acute circulatory failure and acute paroxysmal dyspnea may result from ball-valve blockade of the mitral or tricuspid valve by an atrial myxoma. Myxomas arising in the ventricles can cause outflow tract obstruction. Pulmonary hypertension is common in both left and right atrial tumors. Syncope and shock, along with epileptiform seizures, coma, acute pulmonary edema, cyanosis, gangrene of the nose and toes, and angina pectoris have all been seen with myxomatous cardiac lesions. Sudden death is a characteristic feature of this condition and is the main reason why patients with intracavitary lesions must be taken to surgery without undue hesitation. In a series of 7 patients with atrial myxomas, 5 of whom gave a history of progressive or refractory congestive failure, there were 4 sudden deaths.[9] In all, 8 sudden deaths out of 100 cases of myxoma have been reported.

Embolization. Even if a myxoma is not large enough to cause obstruction the danger of embolization is great. Systemic emboli represent a distinct hazard and at times involve the coronary arteries, thereby leading to infarction. Occasionally nearly the whole tumor has been observed to break off, thus obstructing the bifurcation of the aorta. At times the diagnosis of cardiac myxoma has been made on microscopic examination of sections made after embolectomy. In 1 study[10] systemic emboli were present in 21 of 45 patients (46 per cent). Venous thrombosis and pulmonary emboli, which commonly complicate congestive failure, can be expected to occur in patients with myxoma of either atrium. Emboli consist of tumor fragments or thrombus from the surface of the tumor.

It has been suggested that all systemic emboli be sectioned to look for tumor material. Any patient with repeated pulmonary embolism or infarction or unexplained pulmonary hypertension should be considered for the possibility of a right-sided myxoma. Similarly, in any patient with repeated systemic emboli without an adequate cause, such as mitral stenosis with atrial fibrillation or recent myocardial infarction, a left-sided tumor should be suspected, especially if the patient is below the age of 20.

Constitutional symptoms. The results of a questionaire sent by Goodwin[11] to members of the British Cardiac Society regarding patients with left atrial myxomas revealed that 40 of 45 (89 per cent) had 1 of the following 5 constitutional manifestations: fever (53 per cent), raised sedimentation rate (69 per cent), weight loss (36 per cent), anemia (44 per cent), and abnormal serum proteins (48 per cent). It also showed that these manifestations occurred much more frequently in patients with myxoma than in those who had uncomplicated mitral stenosis; but since mitral stenosis is so often associated with pulmonary infection and infarction, acute rheumatic fever, chronic passive liver congestion, and bacterial endocarditis, as well as being able to coexist with other diseases capable of producing such symptoms, it is apparent that they are in no way characteristic of cardiac tumor. It is now evident that the anemia seen with left atrial myxomas is due to mechanical hemolysis, especially if the tumor is mobile. Platelets are also similarly destroyed. Right atrial myxomas, on the other hand, tend to have associated high hemoglobin levels which are some times coexistent with arterial hypoxia at rest. This is thought to be due to a right-to-left shunt through a dilated foramen ovale or atrial septal defect. Clubbing has occurred in both right and left myxomas.

It has been noted that in a good proportion (15 of 31 in 1 series) of patients with atrial myxomas abnormal, nonspecific serum protein electrophoretic patterns are found. The cause of this is unclear, but speculation implicates hemorrhage and central tumor necrosis, in addition to multiple small emboli to muscles and antibody formation to polysaccharide material discharged from the tumor itself. It is unlikely that the tumors produce unusual globulins, but there is no doubt that with removal of the neoplastic growth in some patients, the above-mentioned manifestations, including abnormal protein patterns, increased sedimentation rate, fever, and anemia have all reverted to normal.[1,11] An immune response characterized by antibody to fresh human heart that in 1 patient pre-operatively was in a titer of 1:120 and postoperatively fell to 1:40, has also been suggested and compared to the similar situation (i.e., positive antibody formation) in patients with postcardiotomy and postmyocardial infarction syndromes.[6]

Murmurs

The patient with an atrial myxoma is very likely to have an atypical, hard-to-hear murmur suggestive of mitral stenosis, which at times includes an "opening snap." There is usually a soft systolic murmur followed by a short mid-diastolic murmur. A loud early diastolic sound is common, and the first sound is usually widely split. The early diastolic sound is probably due either to the tumor striking the left ventricular wall as it descends rapidly into the ventricle during atrial systole, or to checking of the excursion of the tumor, as has been shown to occur on simultaneous phonocardiograms and cineangiograms. The widely split S_1 is due to delay of mitral valve closure produced by the myxoma as it passes from left ventricle into left atrium during ventricular systole, holding the mitral valve open.

An early systolic extra sound, with neither the timing (occurring later) nor the clicking quality of a pulmonary or aortic ejection sound, has been documented in at least 1 case to occur between 0.04-.06 second after the first heart sound.[8] This tumor ejection sound, which is "popping" in character, is due to systolic propulsion of the tumor back into the atrium. Sessile and small tumors do not produce similar sounds. It is common for the signs of mitral disease to be much less impressive than the degree of pulmonary hypertension that accompanies them, and this discrepancy is useful in suggesting a myxoma.[10] In 1 case of left atrial myxoma the murmur was heard better over the posterior thorax rather than the axilla, suggesting that sound transmission is better through a solid tumor lying in the posteriorly situated left atrium.[12]

Laboratory Features

Radiographically, the appearance of the heart in patients with intracavitary tumors is by no means specific, and in some instances the heart shadow may appear quite normal. In other instances the plain film can be helpful and may suggest the presence of a tumor. Tumor calcification is unusual in myxomas, although it has been observed, and is easily differentiated from valvular calcification by fluoroscopy. Calcification of a thrombus in either the atrium or ventricle closely hugs the wall of the chamber, moving in unison with the contracting myocardium.[13]

For the most part, left atrial myxomas result in a radiographic picture similar to mitral stenosis, with enlargement of the left atrium and pulmonary artery, right ventricular hypertrophy, and pulmonary hypertension. However, myxomas are usually clinically evident before the left atrium has had a chance to enlarge to the extent seen in cases of long-standing mitral stenosis, so that the presence of a giant left atrium so common in rheumatic heart disease would tend to rule against the diagnosis of tumor.[7]

The lung fields in patients with suspected cardiac tumors must be carefully scrutinized for vascular changes suggesting the presence of pulmonary venous or pulmonary arterial hypertension, as in left atrial myxomas resulting in mitral valve obstruction. Signs of pulmonary venous hypertension include septal lines, more marked in the bases and mid-zones than in upper zones, and a perihilar haze in the region of the hilar and lower zones of lungs caused by accumulation of fluid in interstitial pulmonary septums. The signs of pulmonary arterial hypertension include pulmonary artery dilatation of the hilar and mid-zone vessels with normal vascular markings of the upper lobes, and arterial narrowing and pruning at the bases. The pulmonary parenchyma must also be scrutinized for the presence of infarcts secondary to emboli or metastasis.[13]

Serial electrocardiographic changes, correlated with the clinical and radiologic evidence at hand, may help to make the diagnosis of intracardial tumors. With progressive obstruction to the right side of the circulation the P waves become tall due to right atrial enlargement, the voltage of the ventricular deflections decreases due to impaired myocardial function, and right bundle-branch-block usually occurs. Tumors involving the left side of the heart produce broad, notched P waves suggesting mitral stenosis, and as pulmonary hypertension develops the electrical axis shifts to the right. Atrial arrhythmias with varying degrees of block may occur with either left or right atrial enlargement, but complete heart block is rare.[14] In general normal sinus rhythm is present.

Although right-heart catheterization studies may offer some clues as to the presence of an intracavitary tumor on the right side, left atrial tumors usually show evidence of obstruction at the mitral valve without yielding any specific findings which aid in the differentiation between rheumatic mitral stenosis and tumor. Left atrial puncture is dangerous and contraindicated if left atrial tumors are suspected because of the risk of embolization.

The most precise and accurate method to diagnose cardiac or intracardiac tumors is by contrast studies. These procedures are especially important in selection of patients for surgery. Two approaches are available: biplane rapid film-changing techniques with excellent anatomic delineation, or cineradiography, which provides adequate anatomic detail but is probably more useful from a functional point of view.

In most instances selective dye studies from the right side of the heart will give the required information. If a tumor is suspected in the right atrium or ventricle, the injection should be made into the superior vena cava or right atrium respectively in order that tumor material or thrombi not be dislodged by the catheter. For a left-sided mass, contrast injection into the pulmonary artery is the safest method of approach.[13] Only occasionally will tumors of the left atrium producing mitral incompetence be clearly shown by left ventricular injection. Filling defects, either fixed or mobile, are sought, with the latter changing position during the cardiac cycle. Inconstant filling defects caused by blood flowing into the atrial chamber from 1 of the major vessels and producing the rather characteristic appearance of a linear-jet washing out the contrast material opposite the orifice of the entering vessel ("streamlining"), should not be mistaken for true space-occupying lesions.[13]

Angiography should be performed for the diagnosis of intracavitary tumor whenever (1) the signs and symptoms of mitral stenosis are atypical, when the left atrium has an irregular outline, or when there is evidence of ball-valve blockade; (2) whenever there is evidence of isolated tricuspid stenosis without mitral or aortic disease; and (3) in cases of unexplained pulmonary or systemic embolization. It should be remembered, however, that mitral-valve disease is 200–400 times as common a cause of left atrial obstruction as in myxoma, and that emboli occurring in patients with mitral stenosis, even if they are in sinus rhythm, is not an indication for angiocardiography since the yield of concurrent tumors is just too small.[6]

Differential Diagnosis Between Left Atrial Myxomas and Mitral Stenosis

In summarizing the various differences between a left atrial myxoma and rheumatic mitral stenosis, the following points substantiate the diagnosis of tumor: (1) absence of rheumatic fever history, (2) sudden onset of rapidly progressive symptoms, (3) irregular progression of symptoms, especially rapid remission of dyspnea following an embolism, (4) unusual variation of symptoms with posture, e.g., positional syncope, dyspnea relieved by lying down, (5) lack of correlation between physical findings, X-ray examination, and severity of symptoms, (6) atypical, hard-to-hear murmurs varying with position in a manner unlike mitral stenosis, (7) absence of a true opening snap, (8) intracardiac calcification not characteristic of mitral valve disease. (9) gallop rhythm, and (10) normal sinus rhythm.[6, 7, 9]

Surgical Therapy of Myxoma

The treatment of intracardiac myxomas is surgical, and prompt intervention following diagnosis is urged because of the high incidence of sudden death. Prior to the clear definition of symptoms and signs of intracardial masses, most tumors were found incidentally during operation for mitral disease, and excision was accomplished by hypothermia and temporary inflow obstruction. Whereas greater than 80 per cent of right atrial myxomas in which surgical excision has been attempted, have been diagnosed pre-operatively, less than 40 per cent of left atrial myxomas have been recognized prior to surgery.[12]

The best approach is by right anterolateral thoracotomy which allows exposure of the left atrial tumor either directly through a left atrial incision or through the right atrium and atrial septum. It is seldom justified to attempt to remove an atrial myxoma by a closed method because of the great risk of embolization, the considerable blood loss inherent with the large atriotomy needed to deliver the tumor, and the need for careful search of both atrium and ventricle before restoration of the circulation. When circumstances make the closed method inevitable, the hazards of embolization, tumor-valve impaction, and exsanguination can be minimized by temporary, induced ventricular fibrillation, as suggested by Differding.[5] Frior et al[15] cite the case of a patient who developed a fatal valve impaction by a myxoma following a closed mitral valvuloplasty. This occurred while the patient was awaiting an open re-operation for excision of the newly found tumor. It emphasizes the necessity for an immediate approach by extra corporeal circulation as maintained by a pump oxygenator. May et al[16] use special screen filters for all cardiotomy blood return because tissue sections from material on the screens have proved that fragmented tumor cells may be embolized when no gross evidence of tumor breakup is seen.

If the tumor is on a pedicle, simple excision is performed. If the attachment is sessile, excision should be wide because, although rarely seen, recurrence of a left atrial myxoma has been reported after initial resection. Septal defects are corrected by Dacron patches. By 1964 there were 112 reported cases of surgical removal of myxomas, and in 1 case a bilateral tumor was successfully excised.[2] Mitral and tricuspid valves destroyed by calcified tumors in a few cases have been successfully replaced by prostheses.

Primary Sarcomas

The most common primary malignant tumor of the heart, comprising over 20 per cent of all primary cardiac tumors, is the sarcoma. It is a predominately right-sided tumor and affects both atria and ventricle equally. The tumor is found in the same age and sex incidence as are myxomas. By 1955 only 134 primary sarcomas had been reported, and only 178 by

1960.[17] Only 11 instances of antemortem diagnosis of right ventricular tumors of any type have ever been reported.[18]

Sarcomas originate from the endocardium and pericardium, and only rarely from the myocardium. They are generally mural tumors but frequently extend into the cardiac chamber. Most tend to be sessile and infiltrative, but 20 per cent are polypoid. The incidence of metastasis has been put at between 25 and 33 per cent. Histologically they are classified into 2 broad groups, the "spindle-cell" sarcomas, such as rhabdomyosarcoma, fibrosarcoma, and myxosarcoma; and the "round-cell" type, such as reticulum-cell and lymphosarcoma. Angiosarcomas are also frequent. The site of distant metastasis is most often the lung and pleura, but may be the mediastinal, tracheobronchial and retroperitoneal lymph nodes, the pancreas, liver, kidneys, and brain.

Clinical Features of Sarcomas

Because sarcomas grow rapidly, the clinical course of a patient with such a tumor is also fairly rapid. It is characterized by exertional dyspnea and syncope, often due to superior or inferior vena caval obstruction. The ball-valve blockage seen in myxomatous atrial tumors is not as common but does occur. Most symptoms are due to inflow stasis, such as dyspnea, orthopnea, dilated neck veins, facial edema, cyanosis, hepatomegaly, ascites, dependent edema, pleural effusion, and increased venous pressure.[19] Anterior chest and left-arm pain is also frequently seen especially with angiosarcomas. Arrhythmias are more common than with myxomas, and sarcomatous invasion of the conduction system resulting in complete heart block has been reported.

Sarcomas frequently cause rapidly recurring sanguinous pericardial effusions, necessitating frequent pericardiocentesis. The finding of tumor cells in aspirated fluid has often made the diagnosis possible. Hemopericardium secondary to tumor involvement of the heart or pericardium may be distinguished from other common causes as follows:

1. In patients with benign idiopathic, tuberculous, or granulomatous pericarditis the aspirate is usually serous or serosanguinous but not grossly bloody.
2. In metastatic malignancy the pericardial fluid is usually serous or serosanguinous. If tumor erosion of a vessel occurs, the fluid can be bloody, but this is uncommon and other signs of metastasis are usually present.
3. In traumatic hemopericardium there is a history of trauma, and the onset of hemopericardium is rapid and usually fatal.
4. Hemopericardium as a result of rupture of the heart after myocardial infarction usually occurs within the first 14 days. Survival after rupture of dissecting aneurysm is rare. Blood dyscrasias can result in hemopericardium, but usually there are other suggestive signs of the condition.[20]

Report of a Case

A 19-year-old woman gave a 6-month history of dyspnea, fatigue, and syncope.[18] Two months prior to admission she had a normal chest X-ray film, but an electrocardiogram showed right-axis deviation and right ventricular hypertrophy. A new grade 3/6 systolic murmur was heard by the private physician.

Physical examination showed a blood pressure of 100/80, facial edema, cyanosis, hepatomegaly, ascites, and ankle edema. Auscultation revealed a loud S_3 and S_4. The lungs were clear. The venous pressure was elevated 21 cm. of water above the right atrium. The prothrombin time was slightly elevated.

Chest roentgenogram showed slight right ventricular prominance and pleural effusion. Cardiac catheterization showed a greatly decreased cardiac output (1.42 L/min.), elevated right atrial (22/6 mm. Hg, mean 14) and right ventricular (102/14 mm. Hg, 58/16 in the infundibular area) pressures, and a low pulmonary artery pressure (16/4 mm. Hg). A right atrial angiogram showed a right ventricular filling defect, but only in retrospect.

The patient was brought to surgery with the diagnosis of valvular and infundibular pulmonic stenosis. During the open procedure the pulmonary artery was found to be nearly collapsed near its bifurcation. A large 6.5 X 4 X 2 cm. irregular lobulated mass projecting through both pulmonic and tricuspid valves, and causing insufficiency of the latter, was found. The pedicle was excised and the tumor easily shelled out. Pathologic examination revealed a low-grade fibrosarcoma.

The patient did well until 4 months postoperatively when she was again admitted with the same complaints. Surgery was not considered possible because of her poor condition, but irradiation therapy proved temporarily helpful in relieving symptoms. She died shortly thereafter from apparent pulmonary and abdominal metastases.

Several points about this case can be made. As in the diagnosis of myxomas, selective dye studies are important in detecting right-sided sarcomas. Because of passive congestion of the liver, blood studies may be important. These tumors should be differentiated from congenital pulmonic stenosis and from restrictive forms of cardiomyopathy by noting the following 4 points:[18]

1. In patients with pulmonary stenosis congestive failure rarely develops so rapidly, and this complication occurs only when there is a severe stenosis with right ventricular pressure greater than 150 mm. Hg.
2. In pulmonary valvular stenosis, post-stenotic dilatation of the pulmonary artery is usually seen in the P-A view of the chest.
3. Restrictive cardiomyopathy usually does not demonstrate ECG evidence of right axis deviation or right venticular hypertrophy.
4. The murmur heard is usually that of tricuspid insufficiency rather than pulmonary ejection.

Inasmuch as congestive failure and venous obstruction appear to be the cause of death rather than metastatic disease, the natural course of cardiac sarcomas is undoubtedly altered by prompt surgical removal of the obstructing mass. Postoperative radiation therapy, as performed in the case reported above, is generally suggested for malignant cardiac disease.

Summary

Primary cardiac tumors represent a small percentage of the pathologic conditions capable of affecting the heart. When they do occur, they may mimic other more common entities, such as rheumatic heart disease. Their presence, therefore, must be considered whenever the history, signs, symptoms, and laboratory results of a cardiac patient do not closely correlate. The basic guidelines set forth above, in conjunction with the more sophisticated cardiac laboratory tests and an increased awareness of the possibility of their presence should make these tumors more readily accessible to surgical correction.

Addendum. The case of a 51-year-old woman with a left atrial myxoma, diagnosed pre-operatively by echocardiography, has been reported by Finegan and Harrison (New Eng. J. Med., 1970, 282, 1022). The authors argue for the use of this ultrasonic technique as a means to screen all patients with the clinical diagnosis of mitral stenosis and thereby detect the rare patient with an atrial tumor.

Acknowledgments

The author wishes to thank Doctors W. Proctor Harvey, T. James Waters, and Antonio C. DeLeon of the Department of Cardiology, Georgetown University School of Medicine, for their kind assistance in the preparation of this paper.

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Congenital Heart Disease During the First Year of Life
A Review of 576 Cases

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DURING THE LAST 3 DECADES remarkable progress has occurred in the ability to diagnose and treat disease of the cardiovascular system in children. The development of intracardiac catheterization and subsequent application of this to children and infants enabled investigators to identify the deranged physiology of the congenitally deformed heart. With this understanding came the rapid development of surgical techniques and the demonstration that many cardiac defects could be corrected with the use of extracorporeal cardiopulmonary bypass. Progress made during the last decade has made available corrective surgery to most children who survive the first 2 years of life with a congenitally deformed heart.

There still remains, however, the awesome relization that one-fourth to one-third of all infants born with congenital heart disease will not survive the first month of life.[1] In this country annually approximately 7,000 infants with heart disease do not survive the first year of life.[2] In order to significantly reduce mortality statistics, efforts must be directed toward the early recognition and treatment of the newborn infant. With intensive medical measures and surgical palliation, the infant may survive until it is possible to apply corrective surgical techniques.

Hence, the major problem in pediatric cardiology today is the high mortality rate in the first year of life, particularly in the neonatal period. The purpose of this paper is to focus attention on this area by presenting a profile of congenital heart disease during the first year of life. Emphasis is placed on the specific anatomic types, the age of the infant at the time of evaluation, and the survival rates. Possible approaches to decrease the high mortality rates will be discussed.

Methodology

The cardiac registry of Children's Hospital was reviewed for the period of January 1965 to March 1970. Patients were classified according to the congenital lesion responsible for the major physiologic abnormality. Status of the patient in all cases reflects the current status and in some cases represents a follow-up of up to 5 years.

All patients are classified under age when first seen at the hospital. They are listed as surviving or not surviving according to age when first seen, regardless of the time of death. For example, a patient first seen at 2 months of age in 1965 but dying 2 years later is listed as a non-survivor under the age when first seen and is a non-survivor whether or not death was directly related to the heart. Many of the patients died from other congenital or hereditary abnormalities. These are listed as non-survivors from the cardiac standpoint.

Patients were classified into 5 age groups as follows: 0 to .5 months; .51 to 1.0 months; 1.1 to 3.0 months; 3.1 to 6.0 months; and 6.1 to 12.0 months.

Results

During the period of the study, 576 infants under 1 year of age were evaluated, found to have congenital heart disease, and entered into the cardiac registry. The ages at which the infants were first seen and the number of patients seen per year are shown in table 1. Of the total group of patients, 61 per cent were seen prior to 3 months of age. Cyanosis, heart murmurs, and congestive heart failure were the usual reasons for referral. Of the 576 infants registered, 74 per cent are surviving at the time of this report (table 2).

Acyanotic forms of heart disease were encountered in 449 (78 per cent) of the total group, and cyanotic forms of heart disease were encountered in 127 (22 per cent) (table 2). Of the total group, 258 or 45 per cent were sufficiently ill to require cardiac catheterization. Of these, 109 or 42 per cent required surgery because of the critical nature of their disease.

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TABLE 1: Patients Registered by Age and Year

Year	1965	1966	1967	1968	1969	1970	
Age In Months							
0 to 0.50	15	19	12	44	30	12	132
0.5 to 1.0	3	6	9	13	16	2	49
1.1 to 3.0	10	14	37	50	47	14	173
3.1 to 6.0	8	12	18	29	31	4	101
6.1 to 12.0	6	22	16	44	22	11	121
Total	42	73	92	180	146	43	576

**TABLE 2: Types of Heart Disease at Children's Hospital of D. C.
1965-1970**

Acyanotic	Number	Per cent of Total Patients	Per cent Surviving with Lesion
VSD	191	32.1	93
PDA	45	7.8	83
PS	37	6.4	97
ECD, complete	28	4.9	50
ASD, 2°	24	4.2	96
AS	19	3.3	84
VSD + CoA	18	3.1	28
BSPA	14	2.4	100
L-TGV	7	1.2	43
CoA	7	1.2	100
ECD, incomplete	7	1.2	72
PAT	12	2.1	100
Misc.	40	7.0	68
	Sub-totals 449	78.0	Average 84.2
Cyanotic			
ToF	37	6.4	78
D-TGV	26	4.5	31
HLH	21	3.7	0
TA	16	2.7	31
SV-DORV	12	2.1	42
Truncus	7	1.2	14
PS or A	6	1.0	17
TAPVD	2	.4	0
	Sub-totals 127	22.0	Average 37.8
	Total 576	100 Per-cent	Average 74.0

KEY TO ABBREVIATIONS IN TABLES

VSD	Ventricular septal defect
PDA	Patent ductus arteriosus
PS	Pulmonary stenosis
ECD, comp.	Endocardial cushion defect, complete type
ASD, 2°	Atrial septal defect, secundum type
AS	Aortic stenosis
CoA	Coarctation of aorta
BSPA	Branch stenosis of pulmonary artery
L-TGV	L-Transposition of the great vessels
PAT	Paroxysmal atrial tachycardia
ToF	Tetralogy of Fallot
D-TGV	D-Transposition of the great vessels
HLH	Hypoplastic left-heart syndrome
TA	Tricuspid atresia
SV-DORV	Single ventricle-double outlet, right ventricle
Truncus	Truncus arteriosus
PS or A	Pulmonary stenosis or atresia
TAPVD	Total anomalous pulmonary venous drainage
ECD, incomp.	Endocardial cushion defect, incomplete type

Of the 576 infants with heart disease, 32 per cent had a defect of the ventricular septum without additional complicating lesions. Ninety-three per cent of this group have survived the period of observation.§

Less frequently encountered were other types of lesions associated with a left-to-right shunt. Patent ductus arteriosus was noted in 7.8 per cent of the total group. Secundum atrial septal defects were noted in 4.2 per cent of the total group. Patients with these lesions had excellent survival rates, as noted in table 2.

Acyanotic congenital defects that faired less well were those with complicating lesions such as endocardial cushion defects of the complete type and ventricular septal defects associated with coarctation of the aorta. In the former group many had associated atrioventricular valvular insufficiency causing severe heart failure which accounted for the low survival rate. The heart failure associated with severe coarctation of the aorta complicating ventricular septal defects renders surgery extremely difficult, and only 28 per cent of the total group survived. None of those who had ventricular septal defect and coarctation in the first 2 weeks of life survived.

The acyanotic forms of heart disease with obstructive lesions (pulmonary stenosis, aortic stenosis, and coarctation of the aorta) as a group were less sick and had excellent survival rates. Ninety-seven per cent of the patients with pulmonary stenosis, 84 per cent with aortic stenosis, and 100 per cent with simple coarctation of the aorta are still living. All of the infants with coarctation had heart failure which responded well to medical therapy.

The cyanotic forms of heart disease, although less frequently encountered, give rise to higher mortality rates. Tetralogy of Fallot was the most common cyanotic defect encountered, as noted in table 2. Six and four tenths per cent of the total group had this lesion. The patients with tetralogy also had the highest survival rates among patients with cyanotic heart disease. Of the 21 infants with the hypoplastic left-heart syndrome, none survived. Transposition of the great vessels is a potentially lethal lesion unless adequate treatment is instituted early in life. The overall mortality of 69 per cent reflects a higher death rate prior to the availability of the balloon septostomy technique. Since the institution of this procedure, early mortality in the infant has been reduced to 11 per cent. Tricuspid atresia is a particularly difficult problem since it is associated with severe degrees of hypoxemia and varying degrees of right-sided heart failure. Results from therapy have been disappointing, with only 31 per cent surviving.

Cyanotic forms of heart disease, although comprising only 22 per cent of the total series, accounted for 52 per cent of the infants seen in the first 2 weeks of life (figure 1). The age at which specific lesions were encountered in our series is shown in table 3. Eighty-one per cent of the patients with a hypoplastic left heart were recognized during the first 2 weeks of life. Fifty-eight per cent of the patients with transposition of the great vessels and 38 per cent of those with tetralogy of Fallot were also seen during the first 2 weeks of life. After the first 2 weeks the prevalence of cyanotic lesions declines, as shown in figure 1. Most of the cyanotic conditions seen after the first 2 weeks of life have associated ventricular septal defects (single ventricle, tetralogy of Fallot, and tricuspid atresia) (table 3).

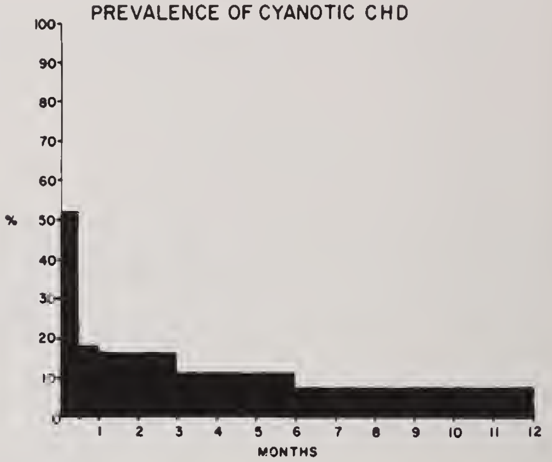

FIG. 1.

The acyanotic forms of heart disease, unless complicated, tend to be recognized later than the cyanotic forms. Although 16 per cent of ventricular septal defects were seen in the first month, the peak period of diagnosis for this lesion being between 1 and 3 months. A similar pattern of recognition was experienced with patent ductus arteriosus. The higher rate of diagnosis in the first 2 weeks reflects the higher incidence of this lesion in the premature infant, usually in association with the respiratory-distress syndrome. When ventricular septal defects are accompanied by obstruction in the systemic circulation, such as coarctation of the aorta or aortic stenosis, congestive heart failure rapidly develops. Seventy-two per cent of the infants with this lesion were seen in the first month of life.

The distribution of all lesions according to age is shown in table 4. The cyanotic forms represent the major abnormalities encountered in the early weeks, with the acyanotic shunt lesions appearing to peak at 1 to 3 months.

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§Of the 191 patients with a ventricular septal defect, 43 or 22 per cent experienced spontaneous closure of the defect.

TABLE 3: Specific Lesions–Age Encountered
Children's Hospital of D. C.
1965-1970

Age In Months	0.5	0.51 to 1	1.1 to 3.0	3.1 to 6.0	6.1 to 12.0
Acyanotic	Per cent	Per cent	Per cent	Per cent	Per cent
VSD	8.4	7.8	40.0	19.5	24.5
PDA	24.4	11.2	40.0	13.3	11.2
PS	0	5.4	35.1	18.9	40.5
ECD, complete	17.9	17.9	25.0	25.0	14.3
ASD, 2°	12.5	0	16.7	16.0	45.8
AS	15.1	5.3	15.1	31.5	31.5
VSD + CoA	44.4	27.8	22.2	5.5	0
BSPA	7.1	7.1	21.4	35.7	23.5
L-TGV	28.6	28.6	28.6	14.3	0
CoA	14.3	0	14.3	28.6	43.0
EDC, incomplete	28.6	0	14.3	14.3	43.0
PAT	8.3	8.3	50.0	25.0	8.3
Misc.	27.5	7.5	20.0	17.5	27.5
Cyanotic					
ToF	38.0	8.1	20.4	13.5	13.5
D-TGV	58.0	11.5	19.2	3.3	7.7
HLH	81.0	0	14.3	0	4.8
TA	37.5	0	31.3	25.0	6.3
SV-DORV	33.3	16.6	33.3	8.3	8.3
Truncus	71.5	14.3	14.3	0	0
BSPA	100.0	0	0	0	0
TAPVD	50.0	0	0	50.0	0

TABLE 4: Percent Distribution of Lesions by Age When First Registered

Age In Months	0-0.5	0.51 to 1.0	1.1 to 3.0	3.1 to 6.0	6.1 to 12.0
Acyanotic	Per cent	Per cent	Per cent	Per cent	Per cent
VSD	12.1	30.5	44.0	37.0	39.0
PDA	8.3	10.2	10.4	6.0	4.1
PS	0	4.1	7.5	7.0	12.4
ECD, complete	3.8	10.2	4.0	7.0	3.3
ASD, 2°				6.0	9.1
AS	2.3			6.0	
VSD + CoA		10.2	2.3		
BSPA				5.0	3.3
L-TGV		4.1			
CoA					
ECD, incomplete					2.5
PAT					
Misc.	16.0	12.2	16.2	16.0	19.0
Cyanotic					
ToF	10.6	6.3	5.2	5.0	4.9
D-TGV	11.4	6.3	2.9	1.0	1.7
HLH	12.9		1.7		
TA	4.5		2.9	4.0	0.8
SV-DORV	3.0	4.1	2.3		
Truncus	3.8	2.0	0.6		
PS-Atresia	4.5				
TAPVR	0.7			1.0	
TOTAL	100	100	100	100	100

Total survival rates and survival rates for cyanotic and acyanotic patients are shown in figure 2. The earlier the patient is seen with signs of heart disease, the greater the likelihood of severe disease and the less likelihood of survival. Of the 181 patients seen during the first month of life only 86 or 47.5 per cent survive. Of the 395 patients seen after the first month of life, 339 or 86 per cent survive.

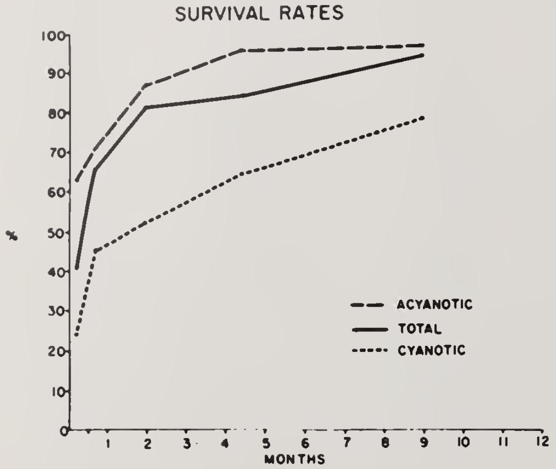

FIG. 2.

The percentage of infants catheterized and operated upon is shown in figure 3. Except for the first 2 weeks of life there is a close relationship between those catheterized and those operated on. About twice the number of catheterizations are performed as compared to infants operated on. The large number catheterized but not operated on in the first 2 weeks of life represents the high incidence of the hypoplastic left-heart syndrome and other inoperable lesions encountered during this time. These infants are catheterized in order to rule out other types of heart disease which are surgically manageable. The older the infant when first seen the less likely he will require catheterization and surgery.

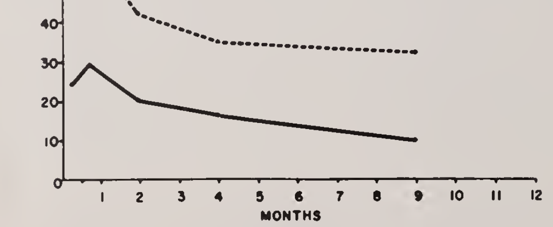

FIG. 3.

Discussion

Our experience with congenital heart disease is not unlike that reported by others,[3, 4] i.e., during the first month of life there is a high prevalence of cyanotic heart disease. Many of these infants are severely ill and many others have lesions which are not correctible by present surgical techniques. Mortality is high in this age-group. The older the patient is when he comes to the hospital, the less likely he is to have severe disease and the greater the likelihood of lower mortality with specific lesions. This fact has been recognized in the past and is manifested in the generally lower mortality statistics in cardiac centers which receive patients from the longest distance,[5] i.e., for a patient to arrive at a referral center several hundred miles away he must live a certain period of time.

If mortality statistics are to be improved, more must be done for the infant seen during the first month of life. Hypoplastic left-heart syndrome which accounted for 17 or 22 per cent of the deaths occurring in the first 2 weeks of life is a severe malformation. Postmortem examination of these patients generally reveals the presence of a small aorta and small coronary arteries. It is safe to assume that, short of transplantation, therapy will not be beneficial to patients who are desperately ill and almost always in cardiogenic shock when first seen. The patient with the milder forms of this syndrome who lives the first 2 weeks of life may survive banding of the pulmonary arteries as a palliative procedure.[6]

Ventricular septal defect and coarctation of the aorta are other lethal lesions when the infants are first seen in the first 2 weeks of life. With improvement in operative techniques and better handling of metabolic needs, more of these patients should be expected to survive.

The outlook has been improved for the patient with d-transposition of the great vessels by the balloon septostomy.[7] Successful palliation for the patient with tricuspid atresia should be attempted by performing a Waterston-Cooley aorta-pulmonary artery shunt. Right-sided heart failure can be adequately handled by enlargement of the atrial defect with the balloon catheter technique.

Pulmonary atresia or severe pulmonary stenosis is another lethal lesion in the early weeks of life. The failure of the small right ventricle to handle the cardiac work required and the tendency for infundibular spasm after the Brock procedure have led us to abandon this approach. Presently, shunts are performed. Patients with this lesion should be handled like those with tricuspid atresia.

Aorta-pulmonary artery shunts are the treatment of choice for patients with tetralogy of Fallot requiring operation in the first month of life. For all of the infants in whom pulmonary oligemia results in severe degrees of arterial hypoxia there is a real need for an extracorporeal membrane oxygenator. With this, a 24-hour period of perfusion allows for correction of respiratory and metabolic acidosis and provides for the controlled administration of anesthesia.

Significant improvement in infant mortality must come by a more intense attack on the cyanotic lesions. Early recognition of these infants in the newborn period with rapid transfer to a facility where adequate diagnostic and therapeutic procedures can be carried out is the keystone to reducing morbidity and mortality.

Summary

Five-hundred and seventy-six infants under 1 year of age with congenital heart disease were registered in the cardiac registry at Children's Hospital of the District of Columbia from January 1965 to March 1970. Seventy-eight per cent were acyanotic and 22 per cent were cyanotic. Seventy-four per cent of the entire group are surviving at the time of this report.

Cyanotic lesions are associated with higher mortality rates and are seen for evaluation earlier than infants with acyanotic forms of heart disease. The earlier the infant is seen with signs of heart disease the less likelihood of survival. Forty-seven and one-half per cent of patients seen in the first month of life survived, compared to 86 per cent survival in the group seen after the first month. Early recognition of cyanotic heart disease is a key factor to lowering morbidity and mortality.

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Enhancing the Development of Institutionalized Infants*

ANN LODGE, PH.D.,† DOROTHY S. HUNTINGTON, PH.D.,‡ MARY E. ROBINSON, PH.D.,§ AND JUDITH LEWIS, M.A.||

ALL LARGE CITIES in the United States must today face the problem of dealing with infants without families: babies who have been abandoned or removed from their families by the various protective services. Although a hospital or institutional setting is admittedly non-conducive to the normal growth of an infant, there seem to be few alternatives available in many cities. Adequate numbers of foster family placements are difficult to achieve without active, interested departments •of Health or Welfare; even with interest and desire, such facilities are not easy to locate for minority group children or those with any physical handicaps. This being so, many infants are being reared in institutions. Our research has been directed to studying the effects of institutional care on infants, and to studying possible methods for improving this care.

When marasmus was originally identified as a significant cause of infant death in institutions, nursing care was improved to provide at least the minimum of physical and psychologic care require to prevent this condition. Although the mortality rate has gone down, less startling but nevertheless insidious patterns of developmental retardation of many institutional babies have now been recognized. These dysfunctions occur in vocalization, gross and fine motor development, exploratory behavior, and social adaptation[1-5] (Dennis and Najarian, 1957; Provence and Lipton, 1962; Rubenstein, 1967; Rubenstein *et. al.*, in press; White, 1967). The slowing of development that begins to manifest itself about the age of 4 months appears to represent an early symptom of environmentally determined intellectual retardation and emotional maladjustment. Although we do not know the full impact of these first 6 months upon future development, there is sufficient evidence that they may be of crucial importance, and that abnormal development during this critical period may seriously handicap a child's future.

From the classic work of Spitz[6] on marasmus (195) to recent experimental studies emphasizing the critical importance of the first 3 years of life for anatomic and physiologic characteristics of brain development there is evidence that permanent damage may result from inadequate availability of appropriate stimulation (Wiesel and Hubel,[7-9] 1963; Krech, Rosenzweig and Bennet, 1962). The studies of Sayegh and Dennis[10] (1965) and White et. al.[11] (1967) indicate that the provision of appropriate supplementary experiences results in improvement of the overall behavioral development of institutionalized infants. Despite increased recognition and experimental demonstration of such relationships, there has generally been little basic change in the quality or pattern of institutional infant care in the United States. As with the field of day care and preschool enrichment programs, infant-care programs here have lagged seriously behind those of many other countries despite the recognition of the dangers of continuing to perpetuate environmental conditions which produce functionally retarded individuals.

While one reason for this may be lack of awareness that such conditions do indeed still exist, another factor may be lack of specific developmental information on the nature of such deficits and of specific ways in which intervention may be effectively implemented under existing conditions. The precise nature of the deficits, their relative importance in the total developmental picture, and their remediability still are not clearly understood.

Therefore, an initial goal of our work was a descriptive study of the early developmental and behavioral characteristics of a group of institutionalized infants. A first step was the carrying out of a cross-sectional and partially longitudinal study of 31 institutionalized Negro infants (14 girls and 17 boys). These infants were drawn from 4 institutions within the Washington Metropolitan area; most of them had had 2 or 3 transfers between these institutions during

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* This study is supported in part by grant # MH 10421, National Institute of Mental Health, United States Public Health Service, Bethesda, Md.

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their first year of life. None was cared for in foster homes (or any other home) outside the institution during its first year although several were placed in foster homes and a few were adopted during their second year. All infants had a birthweight of 2,500 gm. or more and were reported to be in normal pediatric and neurologic condition at birth. With 1 known exception, all infants had an Apgar score of 7 or above, although this information was not available for all infants.

In order to evaluate the developmental status of these infants the revised Bayley Scales of Infant Development[12] (1969) were utilized. The Bayley scales, which yield both mental and motor developmental test quotients and age equivalents, have been standardized on a representative sample of more than 1,200 infants between the ages of 2 and 30 months. These scales are based on many of the more discriminating test items from the scales developed by Gesell, Cattell, Griffiths and others, and have recently become available after years of revision and standardization. They appear to offer a broad basis for developmental comparison from birth to 30 months although their predictive value for subsequent intellectual levels awaits further investigation. Such developmental test results may be compared with the normative data to identify areas of relative strength and weakness which may be significant at a given age level.

In order that we might obtain the most sensitive descriptive analysis of differing individual patterns of developmental test performance, the Bayley scale items for our experimental infants were grouped into 5 major areas: sensory-motor development, motivational characteristics, social development, perceptuo-cognitive development, and language development. This is a new method of analysis developed by 1 of us (A.L.–Developmental profile analysis of Bayley test performance) for this research. The areas were chosen on the basis of known symptoms of deviant development which are often noted clinically within the first year of life in both biologically retarded and environmentally deprived children. Within these 5 categories, test performance was further subdivided into 12 qualitatively different areas: sensory responsiveness, gross motor and fine motor development, attention, purposiveness, exploration, social, imitative learning, perceptual-cognitive development, body language, receptive language, and expressive language.

During the first month of life all experimental infants tested performed within the average range. By the age of 6 months the Mental Development Index (MDI) of the institutional sample was 88 and the average mental age equivalent was 5.1 months. Although scores ranged from 58 to 136, 28 of the 31 infants had an MDI of less than 100. Thus, while still within the low average range, the institutional group does show a substantial lag at the age of 6 months in the overall mental test quotient. In the motor area, scores were slightly higher, with a mean Psychomotor Development Index (PDI) of 94 (range from 57 to 128) and mean motor age equivalent of 5.2 months. The developmental test indices remained relatively similar at 12 months with an average MDI of 84 (mean mental age equivalent = 10.9 months) and a somewhat lowered PDI of 89 (mean motor age equivalent = 11.1 months). The performance of the 6-month group appears substantially below the average for their age in gross motor coördination; fine motor coördination; exploratory activity; purposive, goal-directed behavior; perceptual-cognitive performance; social responsiveness, and expressive vocalization. With the exception of gross motor and perceptual-cognitive performance, these areas remain somewhat depressed at 12 months as well. It may be that gross motor and adaptive, problem-solving behavior together become more adequate between 6 and 12 months as the infant becomes more mobile largely as a function of maturation.

It has been demonstrated that the provision of "mothering" to institutionalized infants on a 1-to-1 basis may prevent some of the intellectual deterioration and personal, social and occupational inadequacy that are frequently associated with prolonged institutional care[13] (Skeels, 1966). Rheingold[14] (1956) experimentally demonstrated the importance for the learning of appropriate social responsiveness of frequent playful interchanges between caretaker and child in an institutional setting. Specific programs have not yet been completely designed however, that may be employed effectively by busy nurses in their care of infants.

In order to assess specific effects of supplementary mothering, 4 normal "boarder" babies (2 boys and 2 girls) were individually assigned to hospital staff members who volunteered to "mother" them for at least 30 minutes a day, at least 4 days each week. These babies received this mothering from 6 weeks of age or younger until they were 5½ to 6 months of age, at which time they were sent to another institution. This supplementary mothering was carried out in whatever way was most natural for each mother-infant pair, but activities involving social play and vocalization in situations of feeding, bathing, and dressing were emphasized. (Additional toy objects which might provide further sensory stimulation and manipulative experience were not utilized with this group. The results of the "object-stimulated" babies will be presented separately.) The babies were tested by examiners who had no knowledge of the infants' special experience.

Significant differences were found at 6 months in the performance of the "mothered" babies as compared with the overall institutional group. Their mental age equivalent was 6.1 months (or normal) which was significantly higher than the mean mental age equivalent of 5.1 months for the institutional group ($p < .05$). A more detailed analysis showed that there were differences ($p < .01$) in gross motor and perceptual-cognitive functions, and in fine motor, purposiveness (or motivational drive), exploration and social responsiveness ($p < .05$).

Thus our preliminary results concerning the poor development of institutionalized babies and the more adequate development of "mothered" babies confirmed findings of previous studies. It is the analysis of the specific functions that are effected by the added social stimulation that may be regarded as a new finding. Our next step therefore was to try to translate these findings into practical terms which would have meaning for the staff of an institution. We have evolved an approach which combines staff education with practical suggestions for changes in ward management. Weekly meetings for nursing staff are structured around specific topics in child development; when some aspect of development is discussed, specific techniques for stimulating that development are suggested. Individual children are given developmental evaluations by a psychologist, and these cases are presented at ward meetings. Toys and stimulating objects are brought in or developed in collaboration with the nursing staff. Suggestions for changes in ward management are made, such as allowing babies more time out of their cribs. The translation from theory to practice is made for each baby on the basis of "stimulation prescriptions" based on the findings of the developmental evaluations. The child's specific strengths and weaknesses are noted, with a checklist of specific stimulating activities that are to be carried out with the child.

It is important that the nursing staff take an active part in creating specific materials and procedures for the program: their active participation is necessary for them to stay motivated over a long period of time, especially when the consulting staff is not present. Unless the nursing staff is personally identified with the aims of the program it will fail under the pressures and strains of understaffing and day-to-day problems on the unit. The ideas that the nursing staff have themselves innovated will be those that are most consistently carried out. For example, in 1 institution the nurses' idea of dressing the babies in real baby clothes instead of hospital garments meant more work for them. They managed to obtain used clothing, and they had to hand-wash the clothing on the unit. However, their effort to keep the babies attractively dressed resulted in the babies being noticed more by the hospital staff and volunteers: the babies were picked up and handled more when they were dressed attractively, and this aided in the staff's seeing the babies as individuals.

Conclusions

Our experience indicates that if changes are to be brought about in the institutional care of infants in order to enhance their development, certain conditions should be met:

There must be staff education directed toward an understanding of the developmental characteristics and specific needs of young children. The staff must learn that very young children, particularly infants, must be continually reached out to and not allowed to remain constantly passive in their cribs.

There should be periodic developmental evaluations on each child which result in specific suggestions for helping that child, so that the staff will be able to see the children as individuals and meet their particular needs.

There must be sufficient staff to ensure a child-to-nurse ratio of at most 5 to 1 and preferably 4 to 1, so that each baby may experience a sustained 1-to-1 interaction.

There must be some provision made for getting babies out of their cribs and out of their rooms. In a hospital setting this may raise the question of possible cross infection, but this does not pose a problem in a well run unit.

There must be institutional support for the program, not only to make it possible for the staff to do their job, but to convince the staff that the work of their unit is as important as that of other units.

The assistance of Betty L. Shanks in analysis and interpretation of the data is gratefully acknowledged.

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CALORIES / 7 oz. Serving*

Beef Broth	22	Vegetable	68
Consommé	29	Tomato	69
Chicken with Rice	43	Cream of Asparagus	70
Chicken Gumbo	48	Cream of Chicken	76
Chicken Noodle	54	Cream of Mushroom	115
Cream of Potato	58	Green Pea	116
Chicken Vegetable	60	Cream of Shrimp (Frozen)	132
Vegetable Beef	66	Bean with Bacon	133

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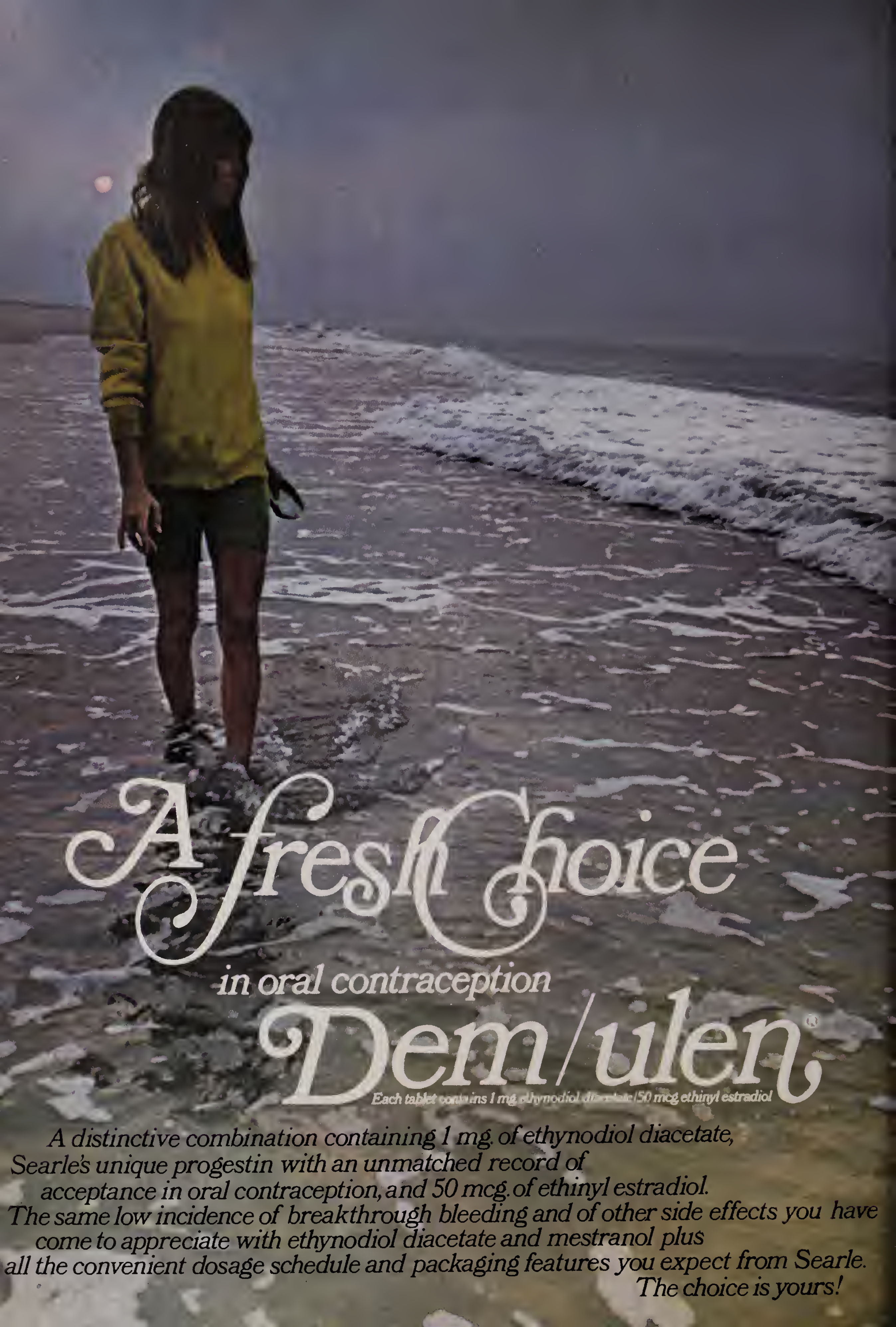
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Special note: Oral contraceptives have been marketed in the United States since 1960. Reported pregnancy rates vary from product to product. The effectiveness of the sequential products appears to be somewhat lower than that of the combination products. Both types provide almost completely effective contraception.

An increased risk of thromboembolic disease associated with the use of hormonal contraceptives has now been shown in studies conducted in both Great Britain and the United States. Other risks, such as those of elevated blood pressure, liver disease and reduced tolerance to carbohydrates, have not been quantitated with precision. Long-term administration of both natural and synthetic estrogens in subprimate animal species in multiples of the human dose increases the frequency of some animal carcinomas. These data cannot be transposed directly to man. The possible carcinogenicity due to the estrogens can be neither affirmed nor refuted at this time. Close clinical surveillance of all women taking oral contraceptives must be continued.

Indication—Demulen is indicated for oral contraception.

Contraindications—Patients with thrombophlebitis, thromboembolic disorders, cerebral apoplexy or a past history of these conditions, markedly impaired liver function, known or suspected carcinoma of the breast, known or suspected estrogen-dependent neoplasia and undiagnosed abnormal genital bleeding.

Warnings—The physician should be alert to the earliest manifestations of thrombotic disorders (thrombophlebitis, cerebrovascular disorders, pulmonary embolism and retinal thrombosis). Should any of these occur or be suspected the drug should be discontinued immediately.

Retrospective studies of morbidity and mortality in Great Britain and studies of morbidity in the United States have shown a statistically significant association between thrombophlebitis, pulmonary embolism, and cerebral thrombosis and embolism and the use of oral contraceptives. There have been three principal studies in Britain[1-3] leading to this conclusion, and one[4] in this country. The estimate of the relative risk of thromboembolism in the study by Vessey and Doll[3] was about sevenfold, while Sartwell and associates[4] in the United States found a relative risk of 4.4, meaning that the users are several times as likely to undergo thromboembolic disease without evident cause as nonusers. The American study also indicated that the risk did not persist after discontinuation of administration, and that it was not enhanced by long-continued administration. The American study was not designed to evaluate a difference between products. However, the study suggested that there might be an increased risk of thromboembolic disease in users of sequential products. This risk cannot be quantitated, and further studies to confirm this finding are desirable.

Discontinue medication pending examination if there is sudden partial or complete loss of vision, or if there is a sudden onset of proptosis, diplopia or migraine. If examination reveals papilledema or retinal vascular lesions medication should be withdrawn.

Since the safety of Demulen in pregnancy has not been demonstrated, it is recommended that for any patient who has missed two consecutive periods pregnancy should be ruled out before continuing the contraceptive regimen. If the patient has not adhered to the prescribed schedule the possibility of pregnancy should be considered at the time of the first missed period.

A small fraction of the hormonal agents in oral contraceptives has been identified in the milk of mothers receiving these drugs. The long-range effect to the nursing infant cannot be determined at this time.

Precautions—The pretreatment and periodic physical examinations should include special reference to the breasts and pelvic organs, including a Papanicolaou smear, since estrogens have been known to produce tumors, some of them malignant, in five species of subprimate animals. Endocrine and possibly liver function tests may be affected by treatment with Demulen. Therefore, if such tests are abnormal in a patient taking Demulen, it is recommended that they be repeated after the drug has been withdrawn for two months. Under the influence of progestogen-estrogen preparations preexisting uterine fibromyomas may increase in size. Because these agents may cause some degree of fluid retention, conditions which might be influenced by this factor, such as epilepsy, migraine, asthma, cardiac or renal dysfunction, require careful observation. In breakthrough bleeding, and in all cases of irregular bleeding per vaginam, nonfunctional causes should be borne in mind. In undiagnosed bleeding per vaginam adequate diagnostic measures are indicated. Patients with a history of psychic depression should be carefully observed and the drug discontinued if the depression recurs to a serious degree. Any possible influence of prolonged Demulen therapy on pituitary, ovarian, adrenal, hepatic or uterine function awaits further study. A decrease in glucose tolerance has been observed in a significant percentage of patients on oral contraceptives. The mechanism of this decrease is obscure. For this reason, diabetic patients should be carefully observed while receiving Demulen therapy. The age of the patient constitutes no absolute limiting factor, although treatment with Demulen may mask the onset of the climacteric. The pathologist should be advised of Demulen therapy when relevant specimens are submitted. Susceptible women may experience an increase in blood pressure following administration of contraceptive steroids.

Adverse reactions observed in patients receiving oral contraceptives—A statistically significant association has been demonstrated between use of oral contraceptives and the following serious adverse reactions: thrombophlebitis, pulmonary embolism and cerebral thrombosis.

Although available evidence is suggestive of an association, such a relationship has been neither confirmed nor refuted for the following serious adverse reactions; neuro-ocular lesions, e.g., retinal thrombosis and optic neuritis.

The following adverse reactions are known to occur in patients receiving oral contraceptives: nausea, vomiting, gastrointestinal symptoms (such as abdominal cramps and bloating), breakthrough bleeding, spotting, change in menstrual flow, amenorrhea during and after treatment, edema, chloasma or melasma, breast changes (tenderness, enlargement and secretion), change in weight (increase or decrease), changes in cervical erosion and cervical secretions, suppression of lactation when given immediately post partum, cholestatic jaundice, migraine, rash (allergic), rise in blood pressure in susceptible individuals and mental depression.

Although the following adverse reactions have been reported in users of oral contraceptives, an association has been neither confirmed nor refuted: anovulation post treatment, premenstrual-like syndrome, changes in libido, changes in appetite, cystitis-like syndrome, headache, nervousness, dizziness, fatigue, backache, hirsutism, loss of scalp hair, erythema multiforme, erythema nodosum, hemorrhagic eruption and itching.

The following laboratory results may be altered by the use of oral contraceptives: hepatic function: increased sulfobromophthalein retention and other tests; coagulation tests: increase in prothrombin, Factors VII, VIII, IX and X; thyroid function: increase in PBI and butanol extractable protein bound iodine, and decrease in T^3 uptake values; metyrapone test and pregnanediol determination.

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President's Page

REFLECTIONS OF A PRESIDENT

I presume every physician before me who held the position of President of the Medical Society of the District of Columbia meditated one night toward the end of his term and just reflected on the passing year. I am so doing.

Accomplishments–only time will tell. Assistance of, increased friendship with, increased respect for so many member physicians of the Society. Frustrations, too many. Not enough time to concentrate on so many problems. Challenges–innumerable and increasing yearly.

My opening page in January stated that the Art of Medicine, though very important, has taken a back seat to the Science of Medicine which has reached a pinnacle and now is being overshadowed by the socio-ecomic problems in medicine. I believe the events of this past year have easily borne this out.

The year was fully occupied with an anti-smoking campaign which attracted worldwide attention as evidenced by our mail; an abortion issue which will continue to be an important subject of discussion; medico-legal problems that require extensive study; legislation for areas sorely lacking at present; liaison with the Health Department of the District of Columbia which is attempting to deliver the best in health care under trying circumstances; environmental health problems that are extremely complex and need much study and support by the medical profession as well as allied fields; the beginning of a Peer Review Organization, probably the area of which we will hear most about next year; and the early rumbles of national health insurance, which could mark a new era in medicine.

To say the least, it has been an interesting year. This type of organization and the work needed to be done as related above requires so many heads and hands. An outstanding office staff, dedicated chairmen with hard-working committee members; a woman's auxiliary working hard, but always willing to engage in a new activity.

I wish I had the space to name every one who has helped me so immensely this past year. Since that is impossible, I can only say "Thank You" to all who have particpated, and I pray that all Presidents will be so fortunately endowed with such dedicated workers.

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History of the Medical Society of the District of Columbia

CHAPTER V

Crisis in the Making

IN AN EFFORT TO IMPROVE the efficiency and effectiveness of the Medical Society an Executive Committee was created on January 8, 1902. Too often in the past the various committees, designated for specific purposes, had failed to follow through on their assignments. Generally they submitted reports with inconclusive results. It was now proposed that the Executive Committee become a filter for all the Society's actions. Its duties were:

"To keep informed in all matters concerning the interests of the medical profession generally, and of the Society and its members in particular; to consider such resolutions as may be referred to it by the Society; to suggest improvements in the conduct of the business of the Society; to consider and report on matters requiring legislative action; to represent the Society before Congress and Commissioners of the District of Columbia, and to report its operations to the Society from time to time as occasion may require together with such recommedations as it may deem proper."

The Committee went to work promptly, and until 1908 it gave its attention to a wide variety of matters, assigning investigations to subcommittees. It appears that the Committee gave a good account of itself and that there were tangible results.

In the meantime the Medical Association continued its activities. However, in early 1907 a committee was appointed by the Medical Society to meet with a similar committee of the Medical Association to consider the relationship of the two organizations. The result was a recommendation that the constitution of the Medical Association be amended to provide that it would henceforth represent the medical profession in all legislative matters relating to medicine and that it become a sufficiently scientific body to conform to the requirements of the American Medical Association. Both organizations concurred in this recommendation.

A humorous footnote at the time was the ruling of the President of the Medical Society "that smoking (at meetings) was out of order." He gave as his authority "the long-established custom of the Society."

For nearly 80 years prior to 1911 the Medical Society and the Medical Association had continued as two separate organizations of physicians with identical memberships. The disadvantage of having two parallel organizations had been apparent for some time. At a meeting on December 9, 1908 Dr. G. Wythe Cook offered a resolution that the Medical Society's Executive Committee consider what changes were necessary in the Society's Charter so that the two bodies might be united. The resolution was adopted. Nothing was accomplished immediately, but the subject became a matter of discussion privately and publicly among members.

Committees of both organizations held a series of conferences with indifferent results. Finally, Dr. John B. Nichols, acting independently and on his own responsibility, presented a constitution he had prepared for consideration providing for a consolidated body. On July 3, 1911 the Constitution as amended was unanimously adopted.

Congress was averse to modifying the Medical Society's Charter and broadening its privileges to include those set forth in the new Constitution. As a result the Society continued for a number of years without a corporate status. An acceptable Charter was finally enacted by Congress on May 24, 1924. Credit for its enactment is given to Dr. G. Wythe Cook because of his stubborn persistence.

World War I

The United States declared war on Germany on April 5, 1917 and thus became involved in World War I. This imposed a heavy burden on the medical profession in the District of Columbia because, as was expected, there was a disruption of medical and other activities.

The Medical Society in the years 1917-1918 devoted itself largely to the war effort, engaging in procurement of physicians for the Armed Forces and adjustment of civilian physicians to the pressures at home.

Fortunately, there were no physicians from Washington who lost their lives during the conflict, but a number were decorated for bravery in action. Dr. John B. Nichols, in Part II of the History of the Medical Society of the District of Columbia, gives details of the distinguished services rendered by Washington physicians in various branches of the military services during World War I.

Healing Arts Practice Act of 1928

Dissatisfaction having been expressed from time to time by members of the Medical Society with the method of licensing physicians in the District, a legislative committee, of which Dr. Joseph S. Wall was chairman, drafted legislation which became known as "The Healing Arts Practice Act of 1928". Dr. Wall appeared before Congressional Committees urging the enactment of the legislation. It finally became a law in 1921 and is the Act under which physicians are still being licensed 40 years later.

Washington Physician President of the AMA

Dr. William Gerry Morgan, a distinguished member of the Medical Society, became President of the American Medical Association in 1929. He presided at the Annual Meeting of the Association in 1930. He was the fourth member of the Medical Society of the District of Columbia to be so honored. A banquet was given by the Society in recognition of his election.

Full-Time Executive Employed

For some years the Medical Society had under consideration the employment of a full-time executive to succeed Dr. Coursen B. Conklin, part-time Secretary-Treasurer, who had been a devoted official of the Society for some 18 years.

On November 17, 1937 the Society authorized a special committee to proceed with employment of an executive. Mr. Theodore Wiprud, Executive Secretary of the Medical Society of Milwaukee County, was chosen. He became the first full-time executive officer of the Society and assumed his duties on June 1, 1938.

In appreciation for Dr. Conklin's valuable services the Society adopted a testimonial resolution to him on January 4, 1939.

Mr. Wiprud, who became the Executive Director and Secretary of the Society, also served as its Treasurer. After familiarizing himself with the Society's past history and recent activities he submitted plans for several projects which included: revision of the Constitution and By-laws; the organization of a prepayment plan, which became known as MUTUAL HEALTH SERVICE; and the establishment of a telephone secretarial service, MEDICAL BUREAU—all with the approval of the Society's Executive Board and the Society itself. The development of these projects was slowed down somewhat by the Society's involvement in the now historic antitrust trial, which will be dealt with in a later chapter.

Despite the handicaps under which the Society functioned in the next few years many changes to reorganize the Society along modern lines took place. No longer did committees keep inadequate records (which were often lost). All meetings were held in the Medical Society's building, which was erected in 1921 and of which members were justly proud. Minutes were kept by the new executive, who became secretary of all committees. Actions of the committees were subject to the approval of the Executive Board, and, where policy was concerned, the Society itself.

Officials in the past several years had been elected by a hit-or-miss fashion from the floor except for the President, the choice for whom was decided by a politically-minded group. A unique system of electing a nominating committee in advance was devised and adopted, which did much to eliminate political maneuvering before the elections.

At first members welcomed a change from the clamorous town-hall business meetings, which had proved nearly disastrous to the Society. Written and orderly reports were read and adopted, a mimeographed copy being provided each member. They were prepared with the greatest of care and with attention to detail. Most members approved of the change but became restive when the lengthy reports were read. Because of lack of attendance, business meetings were reduced from once a month to quarterly, then to semi-annually, and finally to annually. Responsibilities of the Executive Board grew correspondingly, as did those of committees.

Economic Problems

Traditionally, the physician was jealous of his prerogative to serve whomever he wished without interference. If he desired to give his services to financially embarrassed patients without compensation, that was a matter for him to decide. He resented the interference of welfare agencies and refused on many occasions to accept payment from a "third party" for care of the poor. The growth of lay agencies involving medical care disturbed him. In other words, he was an individualist who wished to be allowed freedom to practice as he saw fit. But times were changing.

Contract medical practice had been a sore point with many medical men for a long time. Physicians who agreed to render services to families for a definite sum annually were subject to violent criticism by a majority of physicians. But enormous industrial expansion and changes in national economy gave impetus to contract practice. Large corporations established medical-care plans for their employees. Even medical societies sponsored their own medical-prepayment plans. Insurance companies invaded the field of medical care with voluntary health insurance. Agitation for a Government system of compulsory health insurance on the part of liberals had been growing in the country ever since the close of World War I.

In Washington the matter of contract practice became a burning issue. In 1931 the Society became so deeply concerned over the operation of privately lay-owned clinics in Washington rendering medical service under Workmen's Compensation that they resorted to disciplinary action. "Trials" were held, and guilty physicians were suspended or expelled. In 1932 one member of the Society voluntarily resigned because he did not agree with its economic policies.

The medical profession, nationwide, was particularly aroused by the demand in certain quarters for national compulsory health insurance. The Medical Society supported the efforts of its parent organization; however, unlike the AMA, it took the position that the threat had to be met with constructive action. It sponsored and placed in operation the Medical-Dental Exchange, which budgeted medical bills in an effort to ease the burden of medical costs, and the Central Admitting Bureau for Hospitals, with the same objective in regard to hospitalization costs. These agencies enjoyed fair success for a number of years, but they did not solve the problems of medical and hospital costs as anticipated.

In June 1931 the AMA's Judicial Council stated that organizations which offered medical and hospital services on a dues-membership plan were, in its opinion, "economically unsound, unethical, and inimical to the public interest." The Association's House of Delegates recommended that a complete study be made of the subject by the Council or a special committee.

About the same time proposals were made that a committee be appointed by the AMA "to study some of the plans of medical service in European countries to suggest a new plan."

The situation in regard to the delivery of medical service was to rapidly become a subject of heated nation-wide discussion.

Committee on the Costs of Medical Care

The Committee on the Costs of Medical Care, as it was finally organized, consisted of individuals in private medical practice, public health, medical institutions, and the social sciences. Its Chairman was Dr. Ray Lyman Wilbur, who had been President of the American Medical Association in 1923 (his son, Dwight Wilbur, was to become President of the Association many years later) and was at that time Secretary of the Interior in Herbert Hoover's cabinet.

Following 5 years of study, the report of the Committee was published in 1932. Because there was disagreement among the members, there were majority and minority reports. The majority report, signed by 35 members, was violently opposed by most physicians on the Committee because of what they saw as a socialistic approach. The minority report, prepared by Dr. Arthur C. Christie, of Washington, was signed by 8 other members, all physicians, most of them engaged in private practice.

The recommendation contained in the Majority Report which caused the most opposition among the physicians was the following:

"The Committee recommends that the cost of medical care be placed on a group-payment basis through the use of insurance, through the use of taxation, or through the use of both of these methods. This is not meant to preclude the continuation of medical service on an individual-fee basis for those who prefer the present method."

The Minority Report stated its opposition to this recommendation as follows:

"The minority recommends that Government competition in the practice of medicine be discontinued and that its activities be restricted (a) to the care of the indigent and of those patients with diseases which can be cared for only in governmental institutions; (b) to the promotion of public health; (c) to the support of the medical departments of the Army and Navy, Coast and Geodetic Survey, and other government services which cannot because of their nature or location be served by the general medical profession; and (d) to the care of veterans suffering from bona fide service-connected disabilities and diseases except in cases of tuberculosis and nervous and mental diseases."

The American Medical Association led the fight against the above provision of the majority report. Dr. Olin West, then Secretary and General Manager of the Association, was quoted as saying that the Association should never have agreed to participate in the Committee's studies in the first place, that the result did not surprise him. Dr. Morris Fishbein, Editor of *The Journal of the AMA*, was the Association's articulate spokesman. He appeared in all parts of the country speaking at medical meetings and public gatherings against tax-supported medical care for those able to pay.

At the Annual Meeting of the AMA in June, 1933 the delegate from the Medical Society of the District of Columbia introduced a resolution which was referred to a reference committee. The committee report on the resolution read in part as follows:

"Your committee believes that the organization of groups around the hospitals or otherwise, supported by a voluntary or compulsory insurance or taxation, as recommeded by the majority report of the Committee on the Costs of Medical Care, would be inimical to the best interests of all concerned. It believes that such a plan, if compulsory, would encourage malingering, would create a vast political machine with all its evils, would inevitably lead to state medicine, and would reduce our profession to the status of government employees with the present relation of physician and patient a thing of the past. Your committee believes that the minority report and its recommendations offer the best solution of the existing situation and the only hope for a future stabilized medical practice. It recommends that the House of Delegates adopt the resolution proposed by Dr. H. C. Macatee (delegate from the District of Columbia to the House of Delegates), namely:

"Resolved, that the House of Delegates of the American Medical Association endorse the Minority Report of the Committee on the Costs of Medical Care as expressive in principle of the collective opinion of the medical profession."

Very few medical societies or their members failed to adhere to the "party line". Those who did—and there were very few—were branded as disloyal. The AMA exhibited a power that would not be denied and sought ways to chastise uncooperative medical societies.

Several experiments in providing medical care had been disapproved by the AMA, especially group pre-payment clinics. Physicians became more and more reluctant to participate, not wishing to incur the displeasure or disfavor of the majority of their colleagues who were loyal to the AMA.

However, the demand for prepayment of hospital expense and medical services would not be denied. Although successful group hospitalization plans were in operation before the Committee on the Costs of Medical Care made its report, the AMA, by 1935, had given them only qualified support. Its Bureau of Medical Economics stated that in theory they appeared sound but that in application of the insurance principle to hospitalization there were "numerous opportunities for perversion." The fear was that these plans would sooner or later include medical care "with the inevitable deterioration in quality of medical service."

The previous year (1934) the American College of Surgeons was roundly condemned by the AMA for proposing a prepayment plan for medical care restricted to hospitalized patients. The plan never materialized.

At a meeting of the AMA in June 1935 the delegate from the Medical Society of the District of Columbia introduced a resolution which recommeded that a statement be issued by the AMA regarding medical service experiments, warning that "it is inadvisable to publish incomplete experiments in medical service."

The House of Delegates adopted the following reference committee report:

"Your Committee feels that no plan for the solution of the problem involved in this resolution has been perfected to such a degree that the American Medical Association would be justified in sponsoring it. Further, your Committee recognizes the impracticability of sponsoring any specific plan but approves the establishment of principles governing such plans. The Bureau of Medical Economics has at its disposal most of the plans proposed by the various organizations and stands ready and willing to furnish these on request to any component county or state unit or any individual member thereof. In view of this fact, your Committee deems it inadvisable for the American Medical Association to attempt to dictate any form or setup for medical service but assures the members that the parent organization is always willing to advise and coöperate with any unit desiring assistance. Likewise, your Committee would hesitate to recommend to the Board of Trustees expenditure of a definite sum of money for such purposes as suggested in the resolution because of obvious reasons, among them being the impossibility of estimating the cost. Your Committee recommends that this resolution be not passed."

Some State medical societies in 1939 decided to experiment with voluntary medical pre-payment plans, with reluctant approval by the AMA. One official of the Association, who was bitterly opposed, said: "In every country in the world voluntary health insurance has led to a compulsory system." But, as he was told, organized medicine had no choice but to undertake voluntary plans.

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Editorials

Metropolitan Hospital for Extended Care

Changing Concepts in Patient Care

Medical care in recent years has been marked by rapid and constructive changes of great benefit to the patient. A striking component of these changes is the care directed to the patient by the medical and nursing staff. For example, it was not too long ago when patients entered a hospital only when critically ill, remaining for relatively brief periods of time. As discoveries in medical science and improved hospital procedures made it possible for more to be done in assisting the patients' recovery, the use of the acute-care hospital changed in nature. One may now be a long-term hospital patient, perhaps receiving acute medical care in a Coronary Care Unit or in an Intensive Care Unit, which provide maximum security and treatment. Such facilities afford the acutely ill individual active and responsive in-hospital therapy. After the acute phase of illness has been relieved certain highly specialized techniques of hospital service are no longer necessary and the patient is more comfortable, physically and psychologically, in an extended-care facility. Transfer to such a center is of even further comfort to the patient because it results in substantial financial saving.

An extended-care institution can provide maximum rehabilitative and restorative therapy at a cost of less than half that of maintaining the same patient in a general hospital. The extended-care center approximates hospital-type care still needed by the patient while offering many amenities available to him at home.

The need for extended-care beds is accented by two basic problems: the skyrocketing costs of medical care and the requirement for the utilization of badly needed acute-care beds. It has been estimated that if the stay in hospitals was reduced by one day per patient, the total medical costs for the nation would be reduced 1.7 billion dollars per year.

Need in the D.C. Area

In the Washington area as early as 1966 it was estimated that a total of 215,000 acute-care patient-days per year were utilized by convalescent and chronically ill patients who could have been transferred to post-acute beds had the facilities been available. Proper use of extended-care facilities will both improve the use of acute-care beds as well as appreciably reduce total medical costs per patient by providing lower cost post-acute care.

Fulfilling the Need

It was in recognition of this need for extended-care beds that the Metropolitan Hospital for Extended Care was built.

The 532-bed, nine-story institution opens in December 1970. Extended, nursing and residential care will be provided with most patients expected to require convalescent or rehabilitative care after an acute illness, injury, or exacerbation of a chronic condition.

It is emphasized that the new hospital is not a nursing home, but will have an organized medical staff and be attended by a house staff. Specific rehabilitative and convalescent programs will be available to the admitting physician. A fulltime Director of Nursing will supervise the nursing care administered by registered nurses who are on duty 24 hours a day. The Dietary Department, staffed by American Dietetic Association dieticians, will offer complete dietary services. The Occupational and Physical Therapy Departments will be staffed by degree-graduate therapists with supervision from a board-certified physiatrist. A trained Director of Social Service will assist in providing for the social welfare of the patient and the family, and a full-time Recreational Director will conduct programs to maintain the interest and activity of the patient during his stay.

The Metropolitan Hospital for Extended Care will operate its own pharmacy with a full range of therapeutic agents; it will be staffed by a registered pharmacist. Diagnostic X-ray service will be available and the laboratory service will have the ability to perform any tests the physician may order.

Programs included at the new institution include: Allergy; Arthritis Rehabilitation; Cancer Chemotherapy; Cardiovascular and Peripheral

Vascular Diseases; Dermatology; Endocrine-Metabolic; Geriatric Rehabilitation; Physical Medicine; Psychiatric; Pulmonary Service; and Stroke.

For the patient who does not need extended-care treatment or rehabilitative supervision but is in need of support for daily living the hospital offers a Nursing Care Program.

Teaching and Training Programs

The hospital will afford an invaluable learning experience for interns, residents, and nurses who will rotate throughout the institution and have the opportunity to follow patients beyond the acute stages of illness. Students of nursing, physical and occupational therapy can participate in patient care as observers and clerks.

Convenience to Both Physician and Patient

Location of the Metropolitan Hospital for Extended Care at 1143 New Hampshire Avenue, N.W., provides proximity to hospital facilities and physicians' offices, key factors in comprehensive patient care. The 121 parking spaces in the building itself will provide ample space for both patient and physician.

The Amenities

While quality medical care designed to meet the needs of each specific patient will be the primary goal at the new center, personal comfort and convenience are also important to his well-being and recovery. The hospital will offer many services and facilities, combining health care with comfort in assisting the patient to make the transition from hospital to home. Each patient will occupy either a single or semi-private room, with beds electronically controlled for changing positions. Each room will be equipped with color television, and a personal telephone will be available to each patient.

Rooms will be beautifully decorated, fully carpeted, and all will have private baths. The carpeted corridors lead to a lounge and dining area on each floor where patients may meet their guests and enjoy the companionship of other patients.

Patients may take their meals in their rooms or in the patient lounge, but they will be encouraged to dine in the spacious and beautiful dining room located on the first floor of the hospital. If doctors' orders permit, wine or a cocktail may be served before dinner. Weather permitting, patients will enjoy the rooftop garden or the sheltered patio on the ground floor where Sunday brunch or evening cookouts will occasionally be served.

A beauty salon and barber shop will be available as will a gift shop for personal needs. The center will also include a chapel.

Benefit to the Community

A 1964 report of the Health Facilities Planning Council for Metropolitan Washington, D.C. projected the requirements of both long- and short-term beds for the period 1965–80. More recently the Council estimated a current shortage of 2,000 long-term care beds in the nation's capital and neighboring suburban Maryland and Virginia. The completion of the Metropolitan Hospital for Extended Care will help considerably to alleviate this shortage by providing the rehabilitative facilities, particularly for chronic pulmonary patients, long-term orthopedic and arthritic cases, and those who need special care following various cancer treatment regimens.

Oscar B. Hunter, Jr., M.D.
President, Washington Medical Center

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Indications for Breast Biopsy*

The Ad Hoc Breast Cancer Study Committee of the Medical Society of the District of Columbia has been reviewing cases of breast cancer collected from the medical records departments of area hospitals. A preliminary analysis of the data indicates that delay in breast biopsy is not commonly encountered. However, in cases presented at the meeting of June 18, 1970, such a delay had been present. As an illustrative example, the first case was a 53-year-old woman who had reported to her physician 2 years after detecting a mass in the upper aspect of the breast. The physician examined her and told her that this was a benign process. Thus reassured, she did not return for medical attention until 2 weeks prior to admission to the hospital when another doctor made a diagnosis of breast cancer by biopsy and found vertebral matastasis. Although in individual cases the decision as to whether or not biopsy of a mass in the breast done may be difficult, but there are certain aphorisms which have clinical validity. One of these, for example, is that a breast tumor in a postmenopausal woman should be considered malignant until proven otherwise.

The most common complaint of the patient is the detection of an asymptomatic tumor in the breast. In 90 per cent of cases this tumor is found by the patient herself. The presence or absence of tenderness or pain in the breast is of little diagnostic significance. Almost invariably, early cancer does not produce pain; the most common cause of tenderness or pain is mammary dysplasia (chronic cystic mastitis). This of course, does not suggest that a patient with cystic disease cannot also develop breast cancer. A history of an increase in size of a breast tumor must also receive due attention. Nipple discharge may also be an indication for breast biopsy.

It is evident that the essential feature in the diagnosis of breast cancer is the physical examination of the breast. This skill must be developed and maintained by careful and systematic inspection and palpation of the breasts. Important principles of this examination include exposure of the whole chest area, good lighting, and gentle palpation of the breast with the patient in the recumbent position.

On physical examination a tumor which is solitary or unique or distinct from other lesions in the breast must be regarded with more suspicion than if the lesion seems to be one of a number of similar nodules. A solid tumor which is firm or hard and has an irregular outline is particularly significant. In the premenopausal woman the problems are made more difficult by the firmer consistency of the breast tissue and the frequent presence of fibro-cystic disease. A solid tumor must be regarded with more suspicion than one that is cystic. Aspiration of an apparent breast cyst is often helpful, and cytologic examination of the aspirate is considered desirable. After aspiration of the cyst it is important that no residual tumor be noted, either immediately or during the follow-up examinations. If on aspiration of the breast a solid tumor is noted, excision of the lesion is mandatory. Biopsy should also be performed if the aspiration reveals bloody fluid, or if the lesion does not completely disappear, or if the mass recurs more than once. Other signs such as redness or nipple retraction are indications of late breast cancer and should not be waited for before advocating a breast biopsy. The presence of an eczematous lesion of the nipple suggests the possible presence of Paget's disease with an underlying breast cancer and makes breast biopsy necessary.

If nipple discharge is present, the first consideration should be the attempt to establish the presence or absence of a tumor in the breast. If such a tumor is found, biopsy is indicated. If no tumor is found, and if the discharge is unilateral and can be localized to 1 zone of the breast, "blind" biopsy may be desirable. If the discharge is bloody, the chances of cancer are increased. In the presence of a bloody discharge, surgical exploration seems to be warranted. The chance of cancer being present in such situations increases proportionally with the age of the patient. Cytologic examination of the breast exudate is of questionable value.

As to ancillary techniques, mammography can occasionally be helpful in determining the nature of a breast tumor, but there is apparently a wide latitude in the degree of confidence in this procedure. Certainly it should never replace sound clinical judgment and breast biopsy of indeterminate lesions. It must be considered as an adjunct to good clinical evaluation. Thermography is too recent a technique to have any clinical applicability. Transillumination of the breast may be helpful in certain circumstances but in general is considered of equivocal value.

It is far easier to offer sweeping recommendations for the early diagnosis of breast cancer than it is to list specific indications for biopsy. Nevertheless, the

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* The Committee is deeply appreciative of the financial support given by the American Cancer Society, D.C. Division, Inc. to carry on this professional study.

constant awareness of the breast cancer problem, the performance of a careful history and physical examination, and close follow-up in doubtful cases, in the absence of a biopsy, will prevent delay in diagnosis. The clinical acumen of the physician is the prime determinant of when breast biopsy is to be performed. Improving skill in breast examination should be a life-long project for all doctors. Biopsy of lesions whose nature is not apparent will prevent such situations as that presented in this case report.

John F. Potter, M.D.
Chairman, Breast Cancer
Study Committee

Focus on Malnutrition

The complexities of modern medicine often are best met by a coöperative multidisciplinary approach. On Thursday, December 10, 1970 the District of Columbia Dietetic Association will present a one-day teaching program on nutrition. The coöperation of the Regional Medical Program, representatives of each local medical school, and the D. C. Medical Society has aided the formulation of this program, while the primary drive and sustaining effort have come from the dieticians themselves.

Nutrition may not be adequately presented in some medical school curricula. Stronger evidence exists that balanced nutrition is not adequately practiced in many sectors of our society. This first seminar on nutrition will begin with a practical examination of the incredible problem of undernutrition as it exists today. The afternoon session will address itself to the equally devastating antithesis, overnutrition. A well chosen panel of experts will speak on these topics, and time is planned for questions from the floor. This First Nutrition Conference deserves our support, and the issues of feast and famine our further consideration.

Charles P. Duvall, M. D. *Chairman*
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HEALTH DEPARTMENT NOTES

Reducing Disease Rates Through Health Education

Seeing and hearing are believing. Through its Health Education and Information Division, the D. C. Health Services Administration offers health messages to encourage residents to take care of their own health and to utilize health facilities. Health educators conduct meetings and in service training with community groups and health education aides go door-to-door to discuss health resources. Public information specialists publicize health programs through the news media. The Health Information and Referral Center answers nearly 4,000 inquiries a month on health services. Technicians create and reproduce printed materials on health and some of these have received national recognition. A sociologist is employed to evaluate health education and information activities in order to improve these programs.

From its headquarters at 1875 Connecticut Avenue, N.W. press releases are prepared on a variety of subjects for newspapers, radio and TV stations. Arrangements are made for health officials to appear on radio and TV programs, and on a regular series on Radio Stations WOL and WUST. During the year many public information campaigns are planned, such as the one for German measles and the recent one on lead poisoning.

Although using the news media is the quickest method of reaching the public, other means are also used. A team of health educators meet with civic and school groups to explain a variety of health programs such as birth control, maternal and child health, venereal diseases, and tuberculosis.

Working along with the health educators are several health aides, who go from door-to-door in neighborhoods to explain health services. Together, the health educators and aides reach many people who neither read nor write.

An up-to-date film library of almost 500 films on health and medical subjects is maintained. These films are made available to groups throughout the city and become a valuable part of many programs. Booklets and pamphlets are prepared for distribution to schools, health clinics, civic organizations and physicians. Whenever a new program is developed, or changes in the location of a clinic or office hours are announced, flyers are prepared and widely distributed throughout the community.

Health exhibits are designed and constructed. These are sent to local and national health and medical meetings to explain the Administration's programs and activities.

Day-to-day inquiries on availability of health services is handled through the Administration's Health Information and Referral Center. Located at 919–12th Street, N.W., the center has been in operation for 5 years.

When the Center opened in November, 1965, telephone inquiries numbered about 300 a month; during the past summer the incoming calls have averaged almost 4,000 per month. Inquiries cover the full range of services offered by the D.C. Health Services Administration, as well as those offered by private facilities. Subjects include information on birth control, abortions, location of the tuberculosis mobile X-ray unit and health screening unit. Whenever a special campaign is conducted, such as German measles, rabies shots or emergency situations like an Asian flu epidemic, the telephone number–629-3776–is widely publicized through the news media as the place to call for further information.

In addition to telephone calls, the Center invites walk-in clients. Several hundred varieties of pamphlets and brochures on medical subjects are made available through the Center.

The health education and information activities are evaluated as well as changing attitudes towards the Administration and its programs. Recently a study was conducted to determine clients' choices of clinic hours at 2 maternal and infant care centers.

There are many other duties performed by the Health Education and Information Division such as the gathering of materials and editing the Administration's annual report, making arrangements for officials from other countries to visit health facilities and preparing required replies to official requests for information. The Health Education and Information Division serves as a center for answering questions from news media representatives.

The over-all purpose of the Division is to provide health information to the public in every way possible, hoping to reduce morbidity rates and prolong life. If individuals are medically indigent, they are encouraged to take advantage of public health facilities; if individuals can provide for their own medical care, they are encouraged to see their private physician or go to a private hospital.

Raymond L. Standard, M.D., M.P.H.
Director, Health Services Administration

Clinical Center Studies

The coöperation of physicians is requested in the referral of patients for a study of calcium metabolism disorders being conducted by the Metabolism Branch of the National Cancer Institute at the Clinical Center, National Institutes of Health, Bethesda, Md.

The purpose of the study is to evaluate new therapeutic approaches in "idiopathic" osteoporosis, calcinosis universalis and myositis ossificans. Patients accepted for this study will be expected to remain in the Clinical Center nearly 4 consecutive months. During this time they will receive a constant, metabolic diet for calcium balance measurements. Thus we are seeking coöperative and reliable participants who are willing to invest this amount of time in the hope of therapeutic benefit.

In referring patients with "idiopathic" osteoporosis, the physician should include a report of the serum calcium, phosphorus, alkaline phosphatase, protein electrophoresis, and urinary steroid excretion, as well as a measurement of thyroid function. We would expect that the patient has had screening for occult neoplasm and gastrointestinal malabsorption.

Physicians interested in having their patients considered for these studies should write or telephone one of the investigators named below. Written referrals should include the physician's telephone number as well as address so replies can be given as soon as possible. Contact Dr. Ira Weiss or Dr. James M. Phang, Clinical Center, Room 4N-117, National Institutes of Health, Bethesda, Md. 20014; telephone (301) 496-3097.

The coöperation of physicians is requested in the referral of patients for clinical studies being conducted by the National Cancer Institute Solid Tumor Service at the Clinical Center, National Institute of Health, Bethesda, Maryland.

Needed for these therepeutically oriented studies are patients with: metastatic carcinoma of the ovary, widespread reticulum cell sarcoma, Hodgkin's disease, or lymphosarcoma. Of particular interest for these studies are previously untreated patients with these disorders.

Upon completion of their studies, patients will be returned to the care of the referring physician who will receive a summary of findings.

Physicians interested in having their patients considered for admission to these studies may write Dr. Robert C. Young, Clinical Center, Room 4-B-13, National Institute of Health, Bethesda, Maryland, 20014, or telephone: (301) 496-2031.

DOCPAC BRIEFS

So often members of the Medical Society wonder the value of DOCPAC. So often they ask "What does DOCPAC do? Is it of value? Show us something positive."

Recently, DOCPAC was approached by our colleagues in the academic world at George Washington and Georgetown University Schools of Medicine. They asked for our help with the Senate Bill No. 3974, a bill that all physicians in the Washington Metropolitan area, and especially the District of Columbia, are most interested. This bill. which has the backing of members of both political parties, provides for federal funds to help George Washington University Medical School and Georgetown University Medical and Dental Schools remain solvent. As you know, both medical schools have reportedly exhausted their financial resources. At the moment, their tuition rates are among the highest in the country; these schools have asked for and need federal help in order to stay open.

DOCPAC, through AMPAC and through local political groups, has taken a positive approach to this problem. DOCPAC has been working closely with members of the House and the Senate, who are friends of medicine, to help this bill pass. As of this writing, the outcome is not yet certain, but we believe it will be successful. This is an example of what your DOCPAC political contributions have done and will continue to do in the future.

Send your dues to DOCPAC, 825 New Hampshire Avenue, N. W., Washington, D.C. 20007. Individual membership is $20.00; family membership (including wife and children), $30.00.

William H. Cooper, M.D.
Chairman, D. C. Political Action Committee

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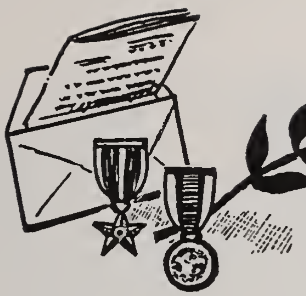

News & Personals

Summary of Executive Board Actions

Proceedings of the September 28 Meeting

Dinner was served for Board members in the Exhibit Hall of the Medical Society. Dr. Robert J. Coffey, Chairman, presided at the meeting that followed, which was attended by Drs. Frank S. Pellegrini, Henry D. Ecker, William S. McCune, Frank S. Bacon, Howard Katzman, James E. Boland, John J. Hughes, C. Willard Camalier, Jr., and Mr. Thomas Sadler, Secretary.

The Executive session of the Board was called to order at 7:30 p.m.

The minutes of the August 24, 1970 meeting were approved as submitted.

Committee Meetings: The Secretary reported the following committees had met since the last meeting of the Board:

September	1	Subcommittee on Community Health Week
	8	Board of Credentials
	15	Grievance
		Liaison With Allied Professions
		Medicolegal
	16	Fee Review
	18	Medicine and Religion
	24	Physician Placement
		Traffic
	28	Environmental Health
Special Meetings:		
August	31	Interspecialty Committee
September	1	MDBRF
	8	DCCMS
	23	Search Committee
	24	Subcommittee on Legal Counsel

Board of Credentials: On recommendation of the Board of Credentials, 8 applicants were elected to Active membership. Their names appear on page 658. Approval was given to the following changes in membership status:

Transfers

Active to Associate: John B. Meyer

Resignations

Associate: Herbert H. Diamond and Howard J. Newton

Publication of Names of Elected Nominating Committee: Following a discussion regarding publishing the names of the elected nominating committee, a motion was made and carried that the names of the elected nominating committee be published as soon as possible following a tally of the vote.

Group Hospitalization's Board of Trustees: On the recommendation of Dr. Pellegrini, a motion was made and carried to approve the renomination of Dr. Brooks Brown to the Board of Trustees of Group Hospitalization, Inc.

Medical Service's Board of Trustees: Stating that longevity was a contributing factor to efficiency and knowledge, Dr. Pellegrini recommended that Dr. Howard Donald and Dr. Russell Tilley, Jr. be renominated to serve a second 3-year term on the Board of Trustees of Medical Service, Inc.

Operation of St. Elizabeth's Hospital: The Board reviewed materials and recommendations submitted by Dr. Frank Bacon in regard to the transfer of St. Elizabeth's Hospital from the authority of the D. C. Government. Dr. Bacon elaborated on the Summary Recommendations of the Advisory Committee on the Operation of St. Elizabeth's Hospital. He pointed out that the major recommendation was that Congress be requested to change the laws in order to set up an independent Mental Health Authority; and that this Authority be responsible for the functioning of St. Elizabeth's Hospital and all other public health services. Following Dr. Bacon's presentation, a motion was made and carried that the policies and recommendations as submitted by Dr. Bacon be accepted as that of the Medical Society of the District of Columbia, and that this matter be passed on to the Legislative Committee for its consideration and for preparation of necessary legislation.

Foundations for Medical Care: As a member of the AMA's Ad Hoc Committee on Foundations for Medical Care, Dr. J. Willard Camalier gave clarifying and background information on the study. Basically, a Foundation for Medical Care is a Committee for a Medical Society set up as a separate entity with its own by-laws and Board of Directors to serve as a Utilization and Peer Review body to the extent desired by its members or the insuring agents. This may include not only physician charges but also utilization of hospital beds or extended care beds as well as review of the pattern of practice of each physician both in his office and in his institutional work. Dr. Camalier stated that the Foundation Concept is gaining national support. He queried whether our Medical Society should consider the establishment of such a Foundation. After brief discussion, a motion was made and carried that the Chairman appoint a subcommittee of the Executive Board to investigate the possible need for establishing such a Foundation under the auspices of the Medical Society.

1971 Kober Lecture: The Chairman reported that it was the Society's year to make a nomination for the Kober Lecturer. Mr. Sadler stated that in the past the Chairman had appointed a Subcommittee to make a nomination to the Board. It was agreed that Dr. Coffey appoint such a Subcommittee and that this Committee make its recommendation for consideration at the October Board meeting.

Other Business

1. Dr. Katzman presented recommendations of the Ad Hoc Interspecialty Committee. A motion was made and carried to accept the recommendation of the Committee that the D.C. Medical Society Representatives on the Board of Trustees of Medical Service, Inc. be elected in the same manner as Officers of the Medical Society and that this matter be referred to the Constitution and Bylaws Committee. A second motion was made and carried that the Executive Board resolutions be published in the Society newsletter rather than in the ANNALS and that this be implemented when the Executive Director determines feasible.

The Board agreed that since the original name of this body had been the Ad Hoc Council on Specialty Sections and had been changed to Ad Hoc Interspecialty Committee, no action was necessary by the Constitution and Bylaws Committee, nor was it necessary to present it at the Annual Business Meeting. The Interspecialty Committee will function as do all other Society Committees, with the exception of the four standing committees (Grievance, Ethics, Classification, and Constitution and Bylaws).

In response to the recommendation that the "Executive Board have clear cut mechanisms of implementation of Peer Review Committee and its constituents," Dr. Pellegrini commented that the Utilization Committee, after a year of functioning, was reaching its goal of firm establishment of guidelines; and that the Committee was already in the process of establishing a Peer Panel of consultants representing all specialty sections.

2. Dr. Coffey read a letter from Dr. Oler, Chairman of the Grievance Committee, which requested a policy decision on a physician making a charge for "reduction of a fracture" when in fact the fracture had been reduced by an intern or a resident acting with the authorization of a physician but not in the physician's presence. The physician then renders follow-up care and sends a bill for the entire procedure. After a period of discussion, a motion was made and carried that it is unethical for a physician to make a charge for any service rendered by an intern or a resident except when such is done in the presence of and under the direction of the physician.

3. Dr. Hughes stated that apparently Medical Service is not being notified of changes in the relative Value Scale approved by the Executive Board. Mr. Sadler was asked to see that Medical Service is properly notified of such changes.

4. Dr. Hughes and other Board members commented on the increasing problems and ineffeciency of the Medical Bureau. Mr. Sadler was asked to study the matter for further discussion at the October meeting.

There being no further business the meeting was adjourned at 9:30 p.m.

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THE PHARMACOLOGICAL BASIS OF THERAPEUTICS
3rd Edition, page 522

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GENERAL NEWS

An innovation in medical education, the medical "juke box," has been installed in the first floor Conference Room of Doctors Hospital. The machine, developed by the Department of Postgraduate Medicine of Albany College, is an experimental model on loan from the National Library of Medicine.

The machine, developed to provide doctors and other medical staff "fingertip" information, incorporates a compact technique which includes provisions for audio instruction, printed material and projected visuals. The texts, prepared by the Albany Medical College staff, are recorded on 45 RPM records which play from 4-6 minutes, many with accompanying slides. Twin speakers enable an entire group to listen, or they can be turned off, channeling the sound through both of the two sets of earphones available. In addition, a built-in recorder tapes any questions, comments or suggestions, which are forwarded to the Albany Staff who review the tape and return answered questions.

Currently, the "juke box" contains 100 texts and over 150 slides. New texts and slides are added as the material becomes available.

The George Washington University has established a Ph.D. program in human ecology. Dr. James A. Lee, the program's first graduate, has been appointed Assistant Professorial Lecturer of the Department of Epidemiology and Environmental Health.

The recently instituted program at George Washington focuses on the ability of the human organism to adjust, survive and flourish through continually changing interactions with its environment, and studies efforts to control the environmental components of this relationship.

On September 30, **General James L. Collins** retired as President of the American Red Cross, a position he had held since April 1, 1964. Taking his place is George M. Elsey, former Red Cross Vice President and White House Aide. Mr. Elsey has had an active career which includes service with the Federal Government, experience as a business executive, and volunteer work with numerous civic, welfare and professional organizations.

As of September 1, any product containing the **artificial sweetener cyclamate** had to be removed from the market and from stocks. The ban was imposed by the Food and Drug Administration.

Under the sponsorship of the D. C. Medical Society, a Totally new student organization, the **D. C. Council of Medical Students**, has been formed.

The purpose of the new organization will be to serve as a Community Medicine Communications Center for the medical students of Georgetown, George Washington and Howard Medical Schools. For the first time the medical students of Washington D.C. will be united in an effort to become involved in the health problems of the city.

The George Washington University has named a South Carolina urologist to head its Department of Urology on December 1, when Dr. Fletcher C. Derrick, Jr., will become Professor and Chairman.

Dr. Derrick is Chief of the Urology Service of the Veteran's Administration Hospital in Charleston, S. C. and Associate Professor of Urology at the Medical College of South Carolina. He was a member of the team performing South Carolina's first human organ transplantation, a kidney transfer, in 1969.

The American Psychiatric Association presented a special award to Smith, Kline & French Laboratories for its involvement and contributions to the "Remotivation" project, a highly successful therapeutic program used in mental hospitals for the past 14 years.

The program consists of a series of patient meetings held weekly by a psychiatric aide with his own patients, but under the supervision of a professional nurse. Its purpose is to augment other therapy, not replace it. The award was presented at the APA's 22nd annual Institute on Hospital and Community Psychiatry held at the Sheraton Park Hotel, September 22-24.

Ten medical students are currently serving **clinical clerkships at Doctors Hospital** under the auspices of the Department of Postgraduate Medical Education. The students arrived in June for two to three months assignments in the Departments of Medicine, Pathology, Radiology, and Surgery. They came to Doctors Hospital from 5 U.S. Schools of Medicine, as well as the Royal College of Surgery, Dublin, Ireland and the Universidad Autonoma de Guadalajara, Mexico.

This is the first year that Doctors Hospital has conducted a clinical clerkship of such magnitude.

The American Academy of General Practice, the second largest medical group in the nation, has voted to change its name of 23 years. The AAGP will now be known as the American Academy of Family Physicians.

PERSONALS

Dr. Paul C. Adkins has been named Chairman of the Department of Surgery at the George Washington University Medical Center. He succeeds Dr. Brian Blades, who remains as Lewis Saltz Professor of Surgery. Dr. Adkins, a member of the George Washington Faculty for 16 years, is also Director of the Division of Thoracic and Cardiovascular Surgery.

Dr. Theodore Koppanyi, Professor Emeritus of Pharmacology at Georgetown University, received an honorary doctor of science degree October 17 at Georgetown’s annual fall faculty convocation. Dr. Koppanyi, a native of Hungary, was presented the degree in recognition of his distinguished contrubitions to the field of pharmacology and to the Georgetown University Medical Center.

Dr. George E. Schreiner, Professor of Medicine and Director of the Renal and Electrolyte Division at the Georgetown University Medical Center, is the cover story subject in the September 21 issue of *Modern Medicine.* In the article, Dr. Schreiner is cited as a “pioneer nephrologist, scientist, educator, writer, artist and innovator. “At Georgetown, the article states, he conducts” one of the nation’s oldest and most prestigious training grants for nephrologists.” He is an Active member of the Medical Society of D.C., president of the National Kidney Foundation, president-elect of the American Society for Nephrology, and a council member of the American Society for Artificial Internal Organs.

Dr. Joseph A. Bellanti, Professor of Pediatrics and Microbiology at Georgetown University Medical Center received the E. Mead Johnson Award for Pediatric Research at the American Academy of Pediatrics annual meeting held in San Francisco, October 17–22.

MEETINGS

Nutrition Seminar for Physicians. A program featuring stimulating subject matter and excellent speakers will be presented on Thursday, December 10, 1970 from 9 a.m. to 4 p.m. at the D.C. Medical Society Auditorium. Registration will be from 8–9 a.m. on the same day. This program is being sponsored by the Medical Society of D.C., the Metropolitan Washington Regional Medical Program, and the D.C. Dietetic Association.

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Book Reviews

Plastic and Maxillofacial Trauma Symposium, Volume I. Proceedings of the Symposium of the Educational Foundation of the American Society of Plastic and Reconstructive Surgeons held at Walter Reed General Hospital, November 30-December 2, 1967. Edited by NICHOLAS G. GEORGIADE, D.D.S., M.D., F.A.C.S., with 7 co-editors and 21 contributors. Price, $25.00. Pp. 221, with 390 illustrations. St. Louis: Mosby, 1969.

This publication, a well illustrated volume consisting of 221 pages, was the outcome of the Plastic and Maxillofacial Trauma Symposium held at the Walter Reed General Hospital, November 30-December 2, 1967, the first symposium of its type held under the aegis of the Education Foundation of the American Society of Plastic and Reconstructive Surgeons. While the symposium was organized primarily for the instruction of the Armed Forces medical services, having as its precedent a similar course held during World Wars I and II, there is much of interest for anyone engaged in the management of maxillofacial injuries. An interesting historical background is also presented in the forward by Dr. Robert Ivy, which is well worth reading.

The volume is subdivided into 8 sections, with a round-table discussion presented at the conclusion of each section. A panel of extremely competent specialists cover a wide range of topics concerning the management of bony and soft tissue injuries about the head and face, as well as providing a general consideration of the management of this type of injury, both in military and civilian circumstances. While the topics discussed are generally those which are more pertinent to a military gathering, there are sections of a non-military nature, such as facial fractures, which are also well presented.

As it was stated, the scope of topics of maxillofacial injuries is extremely wide, and although the publication is not presented as a text on the topic and is therefore not all-inclusive, it does form an excellent refernce for specific problems in this area which would be of great assistance to anyone in this field.

In summary, I would recommend this volume for inclusion in institutional libraries as well as for those individuals who deal in maxillofacial injuries.

ALBERT F. FLEURY, M.D.

Atlas of Diagnostic Techniques and Treatment of Intraocular Foreign Bodies. WILLIAM H. HAVENER, M.D., AND SALLIE L. GLOECKNER, M.A. Price, $19.50. Pp. 197, with 90 plates of drawings. St. Louis: Mosby, 1969.

Dr. Havener has written a very useful text on the management of a patient with intraocular foreign body. The numerous illustrations by Sallie Gloeckner, a medical illustrator, are quite good and enhance the value of what at times may seem a routine discussion. In the diagnostic portion, the emphasis is on the techniques of indirect ophthalmology, which one rarely has a chance to see so well described. In addition, he discusses the use of the Berman Locator and Ultrasonography, as well as Sweet's method of X-ray localization. The various operative approaches to an intraocular body are well illustrated as well as the use of the magnet for removal. This book is primarily geared toward resident training; but should also be of some help to the practicing ophthalmologist.

HOWARD N. BERNSTEIN, M.D.

Tobacco and Your Health: The Smoking Controversy. HAROLD S. DIEHL. M.D. Price (paper), $2.95. Pp. 271, with 17 illustrations. New York: McGraw-Hill, 1969.

As do most paperbacks, this book has a good cover. The touched up X-ray print of a lung cancer really sinks into one's consciousness!

Few physicians now need to be convinced of the significance of the statement of the Surgeon General of the U.S. Public Health Service: "Cigarette smoking is the greatest preventable cause of illness, disability and premature death in this country." Any thoughtful person, physician or not, who really wishes to know the truth about tobacco in relation to health, and particularly the effects of cigarette smoking, will find the evidence in this handy little volume. The author had done an excellent job of bringing the evidence together, evaluating it, and presenting it in an orderly, easily read, and convincing form. Ample references are given, and if one wishes he may verify the inescapable conclusions.

Nevertheless, the canard, "There is absolutely no proof that smoking causes human cancer," persists. This and other questionable statements used by the opposition in their counterattack are dealt with in a masterful manner by the author.

The glossary defining medical terms in lay language is unusually fine.

This book does not belong in a dusty library. It should be in the hands of those who have a problem with tobacco, especially cigarettes. It should prove to be a valuable aid to those physicians who counsel and treat such patients. Read attentively, it can save one's life. The commendable dedication of the author to this end is apparent.

WILLIAM G. WORKMAN, M.D.

Atlas of Obstetric Technic, 2nd ed. J. ROBERT WILLSON, M.D. Price, $19.75. Pp. 313, with 375 illustrations. St. Louis: Mosby, 1969.

The second edition of this excellent reference book on Obstetric technic is a good improvement over Dr. Willson's first edition. There are updated additions on various new technics. The format of the text, which has been expanded, is definitely easier to read, whereas in the first edition, the text had been somewhat crowded, making it difficult to use the volume as a ready reference for the practicing physician.

Dr. Willson has added new sections on Anesthesia and analgesia during labor, which include several new illustrations that are particularly pertinent to recent developments in conduction anesthesia. There are new illustrations of the paracervical block, pudendal block, and saddleblock which will help to reduce the risk of fetal anoxia due to the absorption of the anesthetic agent.

There is an expanded section on the use of oxytoxic drugs following delivery to reduce postpartum hemorrhage. Whereas the text on postpartum hemorrhage was dispersed throughout the first edition, now there is a compact section which is easily absorbed and recalled by the reader.

The position of several sections of illustrations has been improved, so there is no mistake in the sequence of events during such techniques as extraction of the head in breech position, delivery of a breech presentation, and scapula presentations. The author has enlarged and separated his excellent illustrations of a classic caesarian section and the extraction of the head in a breech delivery so that the attention is focused on the more difficult technics encountered during the final maneuvers of those operations.

There is also a compact, but comprehensive section added on the location of the placenta by X-ray placentography and Radioscopic scanning (RISA) which reduces the risk of hemorrhage due to an undiagnosed placenta praevia by the physician unfamiliar with these technics.

The Atlas is suitable for a standard reference manual for medical students and practicing obstetricians alike.

DONALD R. PAYNE, M.D.

Symposium on Cancer of the Head and Neck; Total Treatment and Reconstructive Rehabilitation. Volume 'II. Proceedings of the Second Annual Symposium of the Educational Foundation of the American Society of Plastic and Reconstructive Surgeons, Inc., held at Pittsburgh, Pennsylvania, December 2, 3 and 4, 1968. JOHN C. GAISFORD, M.D., Editor. Price, $31.50. Pp. 381, with 583 illustrations. St. Louis: Mosby, 1969.

For over 20 years the Educational Foundation of the American Society of Plastic & Reconstructive Surgeons has been devoted to encouraging high standards of research, training and education in the specialty of plastic and reconstructive surgery. This "Symposium of Cancer of the Head and Neck, Total Treatment and Reconstructive Rehabilitation" reports the proceedings of the second of a series of symposia to be sponsored by the Foundation in an effort to disseminate current concepts and ultimately to improve the care of the individual patient.

The volume is edited by John C. Gaisford, M.D. There are 54 contributors who represent a wide range of specialities. Plastic and reconstructive surgeons have been joined by distinguished general surgeons, radiologists, pathologists, anesthesiologists, oral surgeons and dentists in presenting the subject. All aspects of cancer of the head and neck are considered.

Material is logically and concisely organized in 10 parts: general considerations, radical neck dissection, reconstruction of the head and neck, special problems, cancer of the tongue, carcinoma of the larynx and cervical esophagus, treatment of advanced malignancy, cancer of the bones of the face and skull, surgery and radiation and problem tumors.

The topics are presented clearly and in detail. The multidisciplinary approach in the total care of the patient is emphasized. Detailed techniques of reconstructive surgery predominate in all sections of the text. Each part concludes with a round table discussion, thus, permitting each participant to answer and elaborate on specific questions.

In general, this is a fine text and most of the 583 illustrations are of excellent quality. The book is especially recommended for residents and physicians involved in the management of head and neck tumors. It will provide all physicians with a current knowledge for treatment of head and neck tumors at the various clinics in the U.S.A.

GORDON LETTERMAN, M.D.

Institutionalized Infants – Lodge et al

(continued from page 630)

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MONTHLY

4 LOCATION OF KNOWN OFFICE OF PUBLICATION *(Street, city, county, state, ZIP code)*
Mt. Royal and Guilford Avenues, Baltimore, Md. 21202

5 LOCATION OF THE HEADQUARTERS OR GENERAL BUSINESS OFFICES OF THE PUBLISHERS *(Not printers)*
2007 Eye Street, N. W., Washington, D. C. 20006

6. NAMES AND ADDRESSES OF PUBLISHER, EDITOR, AND MANAGING EDITOR

PUBLISHER *(Name and address)*
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EDITOR *(Name and address)*
Wallace M. Yater, M. D., 2007 Eye Street, N. W., Washington, D. C. 20006

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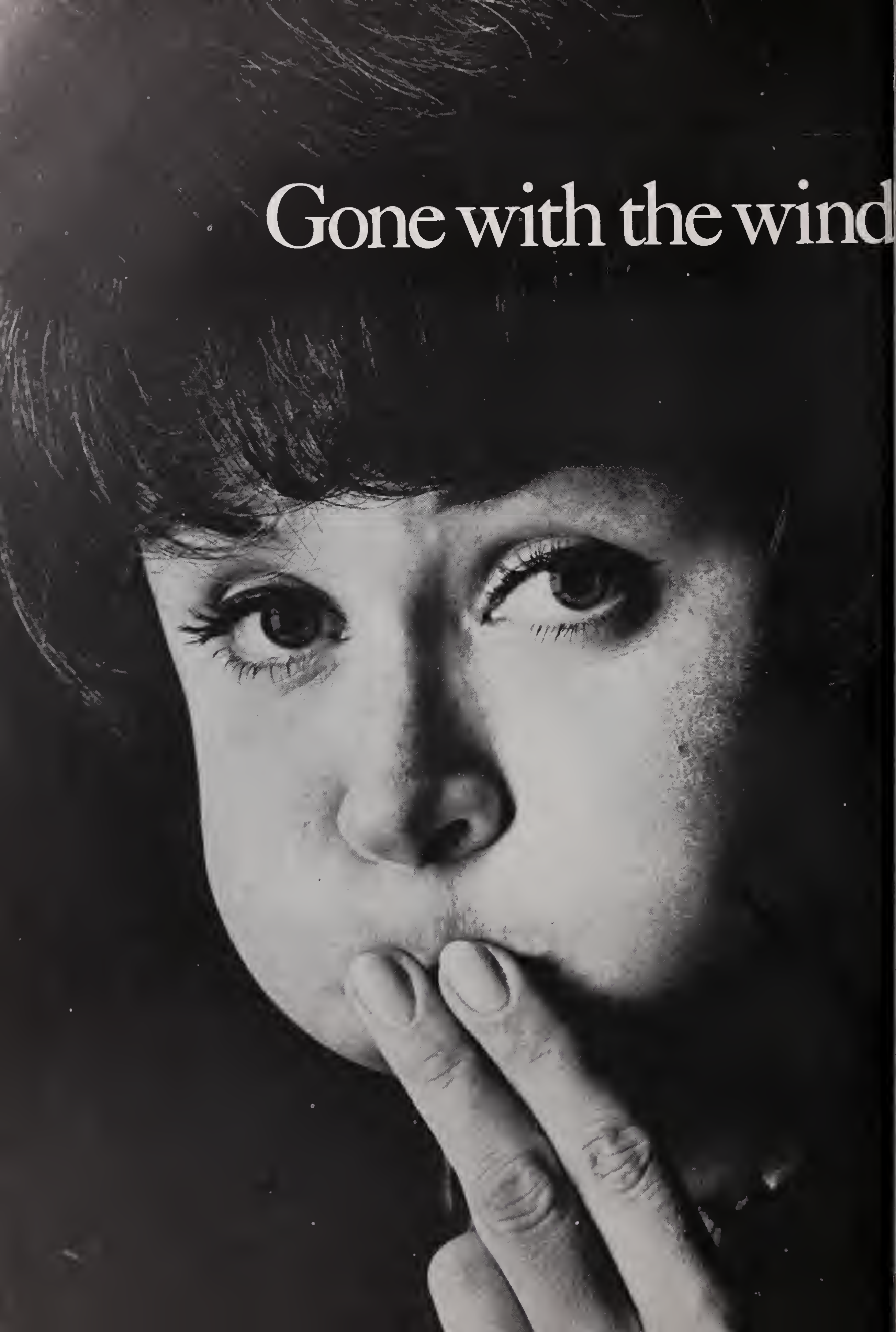
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*Slanger, A.: Med. Times 94:150 (Feb.) 1966.

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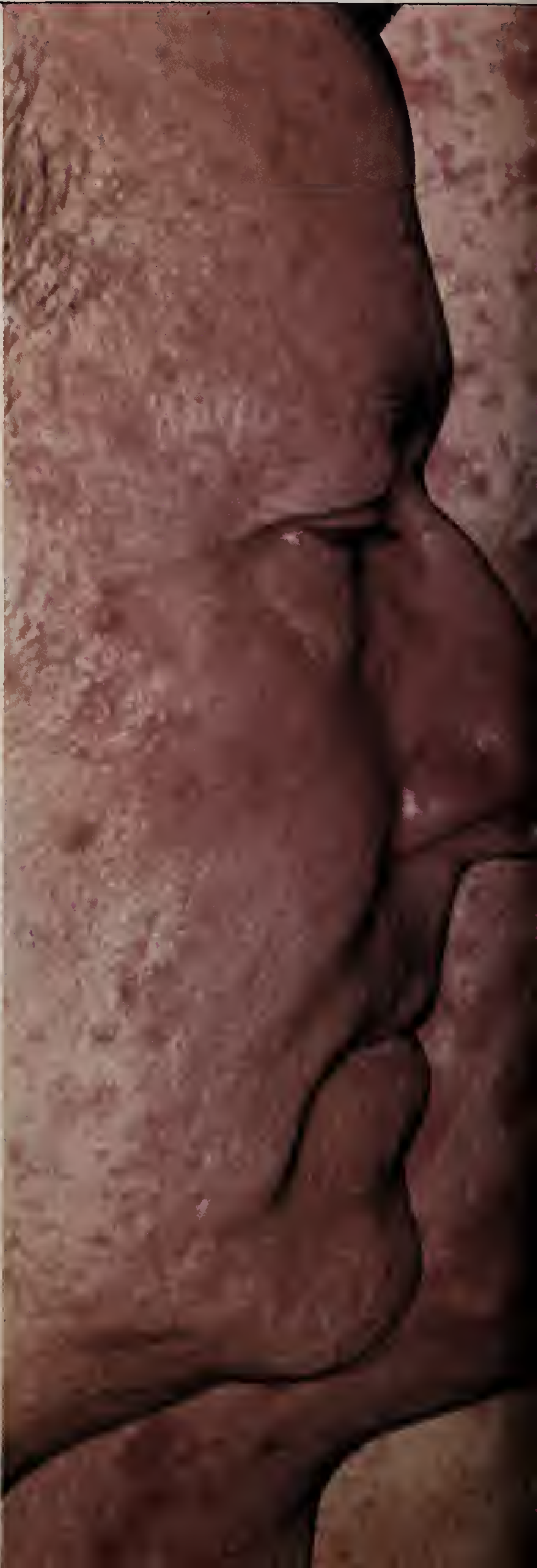
cream/solution

for the treatment of solar/actinic keratoses... a topical alternative to conventional therapy

1/22/68—Treatment with 5% 5-FU cream commences. Patient K.L. showing widespread but mild solar keratoses (also known as actinic keratoses).



Fluorouracil—the Roche contribution

In 1962, Roche Laboratories introduced Fluorouracil Roche® (5-fluorouracil). Early clinical work with this drug suggested that it possessed a selective cytotoxic activity when applied topically to certain kinds of lesions. Based on this work and years of clinical trials, a standardized form of topical fluorouracil can now be recommended for treatment of multiple solar or actinic keratoses.

Efudex® (fluorouracil)—a new alternative to conventional therapy

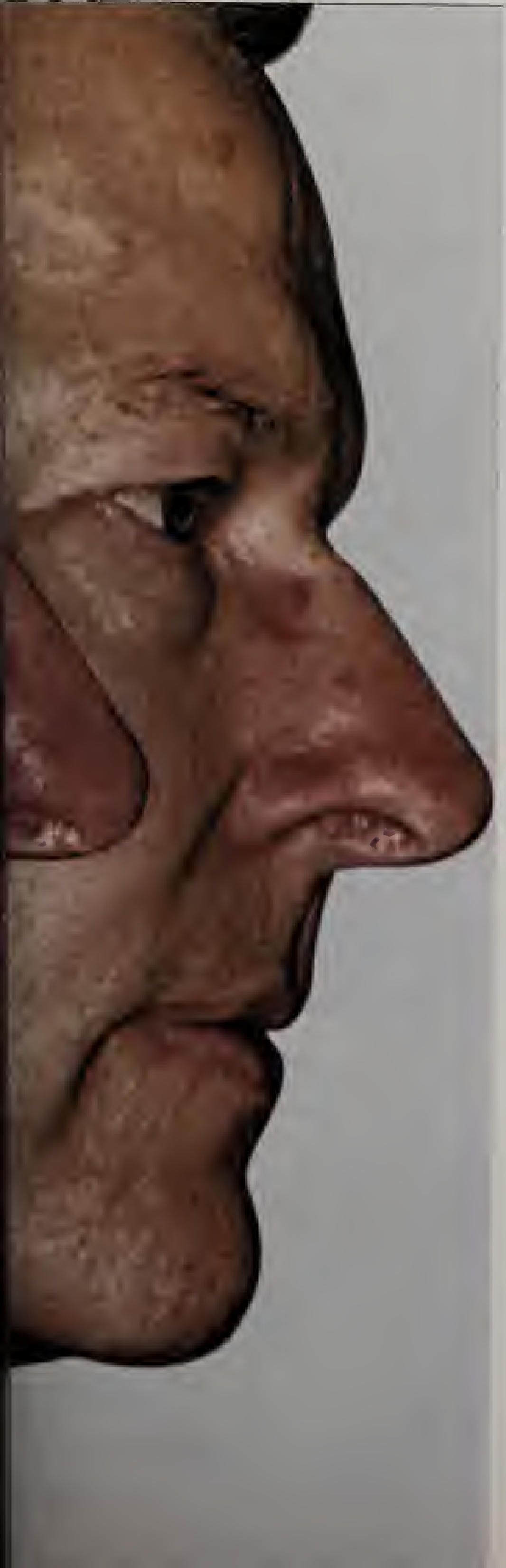
Efudex presents the physician with a topical alternative to surgery in the treatment of solar or actinic keratoses. It is effective, comparatively inexpensive and especially well-suited for treatment of multiple lesions. Important, too, is the highly desirable cosmetic result. Clinical experience demonstrates that treatment with Efudex results in an extremely low incidence of scarring.*

Highly effective on first and later applications

In clinical trials, depending on the dosage form and strength used, complete involution occurred in 77 to 88 per cent of lesions following treatment. The rate of recurrence was low, ranging from 1.7 to 5.6 per cent up to a year after completion of therapy. When lesions did recur or new ones appeared, repeated courses of Efudex therapy proved effective.*

/68—After 11 days of treatment.
:hema is seen at site of keratoses. In
ition, numerous lesions not apparent
r to therapy have become manifest
harply defined reactions. Intervening
., also treated, shows no response to
apy.

)/69—One year after cessation of
apy. Skin appears clear with no evi-
:e of scarring. Examination reveals
of recurrence or the formation of
lesions.



Predictable sequence of therapeutic response

Two to four weeks constitutes a typical course of Efudex therapy. The response is usually characteristic and predictable. After three or four days of treatment, erythema begins to appear in the area of the keratoses. This is followed by an intense inflammatory response, scaling and occasionally moderate tenderness or pain. The height of the inflammatory reaction generally occurs two weeks after the start of therapy, and then begins to subside as treatment is stopped. Within two weeks of discontinuing medication, the inflammation is usually gone. A mild erythema may remain for two to three months before gradually receding.

Selective—with a high degree of safety

Despite the temporary unsightliness and discomfort of the inflammatory episode, Efudex is, in general, more readily tolerated than surgery. Clinical work shows the intense inflammatory response to be limited to the area of the lesion. Normal skin is not similarly affected. Another measure of Efudex safety: systemic absorption of topical fluorouracil was insignificant, indicating a low risk of systemic toxicity.*

Two strengths—two convenient dosage forms

Efudex is available as a 2% or 5% solution or as a 5% cream. It is applied twice daily by the patient with a nonmetal applicator or suitable glove.

Before prescribing Efudex, however, there are two important considerations. First, please consult the complete prescribing information for precautions, warnings and adverse reactions. Second, advise the patient that treated lesions should respond with the characteristic but transient inflammation. A positive sign that Efudex is working for them.

*Data on file, Hoffmann-La Roche Inc., Nutley, New Jersey.

2% and 5% Solutions; 5% Cream
Applied twice daily—resolves
solar or actinic keratoses.

new
Efudex®
(fluorouracil)
cream/solution

For full prescribing information, please see the following page.

Roche introduces

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(fluorouracil) cream/solution the new standardized topical for solar/actinic keratoses

Description: Efudex solutions and cream are topical preparations containing the fluorinated pyrimidine 5-fluorouracil, an antineoplastic antimetabolite.

Efudex Solution consists of 2% or 5% fluorouracil on a weight/weight basis, compounded with propylene glycol, tris-(hydroxymethyl) aminomethane, hydroxypropyl cellulose, parabens (methyl and propyl) and disodium edetate.

Efudex Cream contains 5% fluorouracil in a vanishing cream base consisting of white petrolatum, stearyl alcohol, propylene glycol, polysorbate 60 and parabens (methyl and propyl).

Actions: There is evidence that the metabolism of fluorouracil in the anabolic pathway blocks the methylation reaction of deoxyuridylic acid to thymidylic acid. In this fashion fluorouracil interferes with the synthesis of deoxyribonucleic acid (DNA) and to a lesser extent inhibits the formation of ribonucleic acid (RNA). Since DNA and RNA are essential for cell division and growth, the effect of fluorouracil may be to create a thymine deficiency which provokes unbalanced growth and death of the cell. The effects of DNA and RNA deprivation are most marked on those cells which grow more rapidly and which take up fluorouracil at a more rapid pace. The catabolic metabolism of fluorouracil results in degradative products (*e.g.*, CO_2, urea, α-fluoro-β-alanine) which are inactive.

Studies in man with topical application of ^{14}C-labeled Efudex demonstrated insignificant absorption as measured by ^{14}C content of plasma, urine and respiratory CO_2.

Indications: Efudex is recommended for the topical treatment of multiple actinic or solar keratoses.

Contraindications: Efudex is contraindicated in patients with known hypersensitivity to any of its components.

Warnings: If an occlusive dressing is used, there may be an increase in the incidence of inflammatory reactions in the adjacent normal skin.

Prolonged exposure to ultraviolet rays should be avoided while under treatment with Efudex because the intensity of the reaction may be increased.

Usage in Pregnancy: Safety for use in pregnancy has not been established.

Precautions: If Efudex is applied with the fingers, the hands should be washed immediately afterward. Efudex should be applied with care near the eyes, nose and mouth. To rule out the presence of a frank neoplasm, a biopsy should be made of those areas failing to respond to treatment or recurring after treatment.

Adverse Reactions: The most frequently encountered local reactions were pain, pruritus, hyperpigmentation and burning at the site of application. Other local reactions included dermatitis, scarring, soreness and tenderness.

Also reported were insomnia, stomatitis, suppuration, scaling, swelling, irritability, medicinal taste, photosensitivity and lacrimation.

Laboratory abnormalities reported were leukocytosis, thrombocytopenia, toxic granulation and eosinophilia.

Dosage and Administration: Efudex should be applied twice dail with a nonmetal applicator or suitable glove in an amount of the solution or cream sufficient to cover the lesion. When Efudex is applied to a lesion, a response occurs with the following sequenc erythema, usually followed by vesiculation, erosion, ulceration, necrosis and epithelization. The lower frequency and intensity o activity in adjacent normal skin indicate a selective cytotoxic property. Medication should be continued until the inflammatory reaction reaches the erosion, necrosis and ulceration stage, at which time use of the drug should be terminated. The usual duration of therapy is from 2 to 4 weeks. Complete healing of the lesion may not be evident for 1 to 2 months following cessation of Efudex therapy.

How Supplied: Efudex Solution, 10-ml drop dispensers—containi 2% or 5% fluorouracil on a weight/weight basis, compounded with propylene glycol, tris(hydroxymethyl)aminomethane, hydroxypropyl cellulose, parabens (methyl and propyl) and disodium edetate.

Efudex Cream, 25-Gm tubes—containing 5% fluorouracil in a vanishing cream base consisting of white petrolatum, stearyl alcohol, propylene glycol, polysorbate 60 and parabens (methyl and propyl).

Clinical Studies: The effectiveness of the three preparations as determined by complete involution of solar keratoses was: 2% Solution, 77% of 282 lesions; 5% Solution, 88% of 202 lesions; and 5% Cream, 85% of 189 lesions. In those lesions wher complete involution followed treatment, the rate of possible recurrences observed clinically at periods up to 12 months or mor was: 2% Solution, 4.6% of 218 lesions; 5% Solution, 1.7% of 177 lesions; and 5% Cream, 5.6% of 160 lesions. Because of the toxic potential of fluorouracil, some physicians preferred to use the 2% solution when large areas were to be treated. Approximately 30% of the lesions required treatment for two weeks or less; approximately 78% required four weeks or less for adequate treatment.

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Precautions: In the elderly and debilitated, and in children over six, limit to smallest effective dosage (initially 10 mg or less per day) to preclude ataxia or oversedation, increasing gradually as needed and tolerated. Not recommended in children under six. Though generally not recommended, if combination therapy with other psychotropics seems indicated, carefully consider individual pharmacologic effects, particularly in use of potentiating drugs such as MAO inhibitors and phenothiazines. Observe usual precautions in presence of impaired renal or hepatic function. Paradoxical reactions (e.g., excitement, stimulation and acute rage) have been reported in psychiatric patients and hyperactive aggressive children. Employ usual precautions in treatment of anxiety states with evidence of impending depression; suicidal tendencies may be present and protective measures necessary. Variable effects on blood coagulation have been reported very rarely in patients receiving the drug and oral anticoagulants; causal relationship has not been established clinically.
Adverse Reactions: Drowsiness, ataxia and confusion may occur, especially in the elderly and debilitated. These are reversible in most instances by proper dosage adjustment, but are also occasionally observed at the lower dosage ranges. In a few instances syncope has been reported. Also encountered are isolated instances of skin eruptions, edema, minor menstrual irregularities, nausea and constipation, extrapyramidal symptoms, increased and decreased libido—all infrequent and generally controlled with dosage reduction; changes in EEG patterns (low-voltage fast activity) may appear during and after treatment; blood dyscrasias (including agranulocytosis), jaundice and hepatic dysfunction have been reported occasionally, making periodic blood counts and liver function tests advisable during protracted therapy.

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(1) Siver, R. H.: CMD, **21**:109, September 1954. (2) Frykman, H. H.: Minn. Med., **38**:19-27, January 1955. (3) McGivney, J.: Tex. State Jour. Med., **51**:16-18, January 1955. (4) Quehl, T. M.: Jour. of Florida Acad. Gen. Prac., **15**:15-16, October 1965. (5) Weekes, D. J.: NY State Jour. Med., **58**:2672-2673, August 1958. (6) Ellis, S. and Spratt, J. S.: JOUR. AMER. GER. SOC., **18**:410-415, May 1970.

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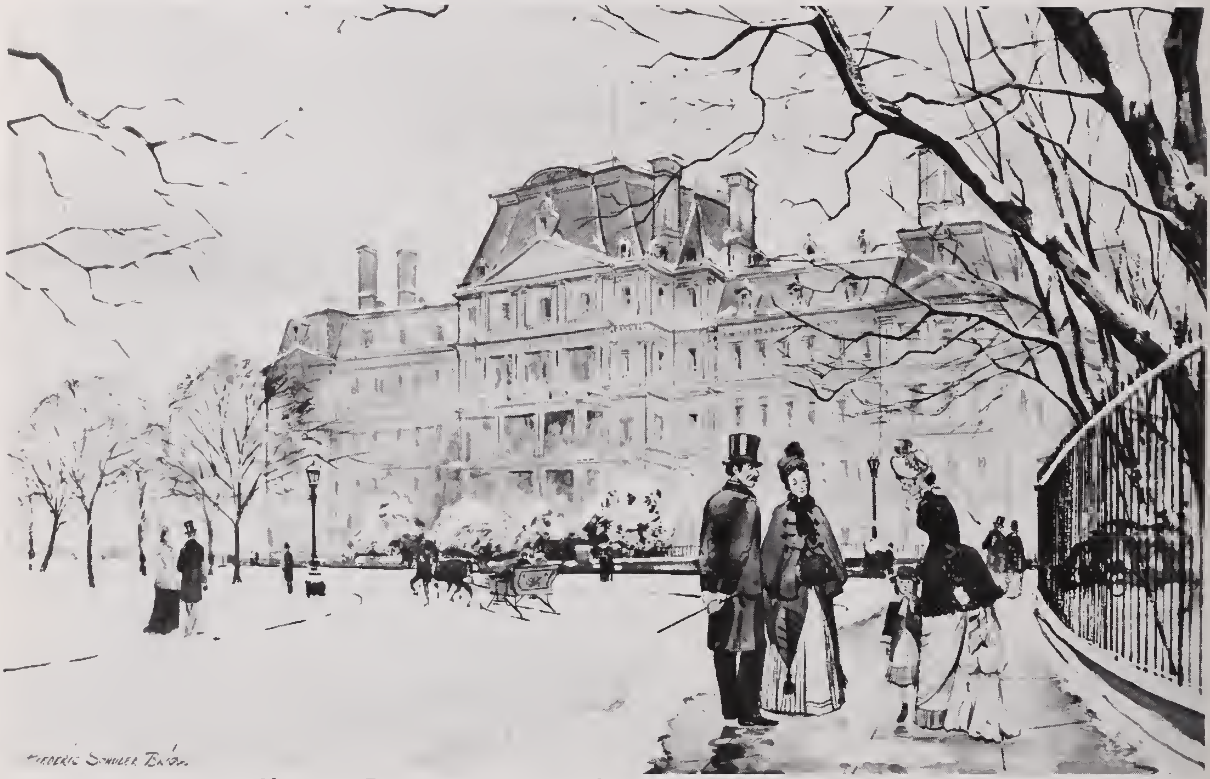

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Yearly Subscription, $8.00
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Second-class postage paid at Baltimore, Md.
Published monthly at
Mount Royal and Guilford Avenues,
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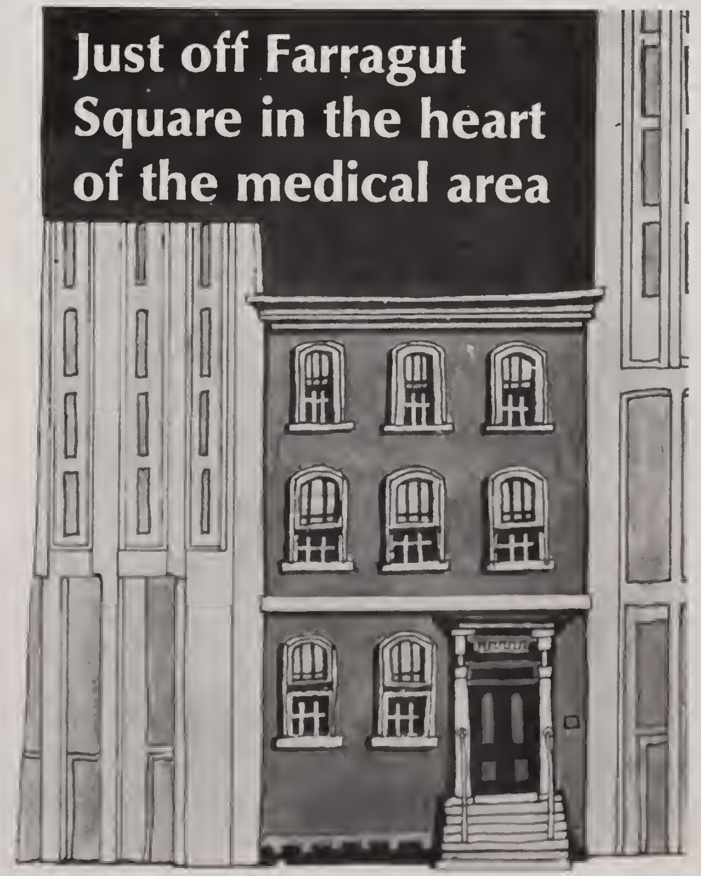
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2007 Eye Street, N.W. Washington, D.C. 20006

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MEDICAL ANNALS
of the District of Columbia

December 1970
VOLUME XXXIX • NUMBER 12

Morris Cafritz Memorial Hospital Number

This is the ninth in a sixth series of special numbers of the MEDICAL ANNALS, the scientific material for which is supplied by medical institutions and scientific organizations in the Washington Metropolitan area. For the MORRIS CAFRITZ MEMORIAL HOSPITAL NUMBER the Editorial Board is indebted to the Publications Committee of the Medical Staff, Cafritz Memorial Hospital, who secured the papers which appear in this issue.

Diagnosis and Management of Non-Toxic Thyroid Disease

PHILIP A. COX,* M.D. F.A.C.S. AND MA´SUD HOMAYOUNI,† M.D. F.A.C.P.

THE PAST 4 decades have witnessed a gradual change in the incidence of various types of thyroid surgical admissions. This has been consequent to the introduction of iodized salts, thiouracil or its derivatives, and introduction of I^{131} for treatment of benign conditions of the thyroid since 1941.[1] The incidence of various types of the thyroid diseases has also changed. Nodular toxic and diffuse toxic goiters have decreased, while thyroiditis, solitary and multinodular goiter, and carcinoma [2, 3] have increased markedly. Exploration of most enlarged thyroids and thyroids harboring single or multiple nodules is necessary to exclude malignancy. The incidence of malignancy in diffuse toxic goiter, however, is sufficiently low that surgery for this reason alone is not warranted.

Complications incident to surgery, such as vocal cord paralysis, temporary and permanent hypothryoidism, [2, 4, 5] hypoparathyroidism, and rare mortality, originally provided the impetus for use of I^{131} in treatment of diffuse toxic goiter in preference to surgical ablation. However, surgery continues to find a place in the treatment of this condition, since the incidence of hypothyroidism is higher with I^{131}, reaching 26.5 per cent in 7 years post-treatment.[6] Postoperatively the incidence is generally reported as only 1 to 2 per cent.

While radioactive iodine may reduce the size of an unsightly enlarged thyroid, it almost never causes its complete disappearance. The treatment of tracheal compression incident to diffuse and nodular toxic goiter continues to be surgical resection.[2] Furthermore, the ever-present danger of the envolvement of malignancy and leukemia following use of I^{131}, even though disputed, continues to make surgical resection the preferable method of treatment, at least in the younger patient.[2, 7] These problems have materially influenced and changed the thinking in the management of thyroid diseases.

Material and Methods

The Morris Cafritz Memorial Hospital is a general community hospital which opened in April of 1966. From April of 1966 to December of 1969, 7,849 major operations were performed at the hospital. During the period under consideration 126 patients (1.6 per cent) were operated on for thyroid disease other than thyrotoxicosis. The majority of operations were performed because of clinically suspected nodules or discovery of so-called "cold nodules" on thyroid scan.

Clinical records were reviewed for information regarding the onset of symptoms, duration of symptoms, presence or absence of a discrete mass, and the method of its discovery, whether by the patient himself, by the physician during routine physical examination, or as an accidental finding of a nodule on radio-scan. Only data germane to the purpose of this paper will be recorded.

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Results

The clinical material in this paper is classified as to the type of thyroid disease as diagnosed histologically and is shown in Table 1.

TABLE I: Classification Of The Diseases Of Thyroid

	No. of Cases
Solitary nodule	56
Nontoxic nodular goiter	41
Multiple adenomas	2
Diffuse lymphocytic thyroiditis	14
Granulomatous thyroiditis	2
Focal lymphocytic thyroiditis	1
Papillary carcinoma	2
Mixed papillary and follicular carcinoma	2
Involuted hyperplasia	3
Parathyroid cyst	1
Thyroglossal duct cyst	1
Normal thyroid tissue	1

Age, sex and race. The average age of the patients at the time of surgery was 39.3 years with a range of 17 to 69 years. The duration of symptoms was variable. Often this information was not available. The longest delay between the onset of the symptoms and surgery was 3 years.

There were 113 females and 13 males. Eighty-two of the 113 females and 10 of the 13 males were white and the remainder colored. Orientals and patients of other racial origin were not represented in this group.

There was no significant difference between the average age of colored females, white females or white males, but the colored males were younger on the average. This difference, however, is probably not significant since only 3 colored males were represented in the entire group.

Clinical findings. An enlarged thyroid gland or a mass in the neck was the presenting complaint in every case. One patient sought treatment for "pain in the throat" and shortness of breath. This patient was subsequently found to have intra-thoracic extension of a large multinodular goiter.

In 80 instances the patient or the family had noted the mass. This observation had then prompted the patient to seek the advice of a physician. In the remaining 46 cases, a mass, enlarged thyroid, or a thyroid nodule was discovered during routine physical examination or examination for other symptoms.

Pathologic examinations and findings. The diagnosis of adenoma was based on universally recognized criteria. [8, 9] Follicular adenomas are not subdivided further to embryonal, fetal, micro-follicular, and macro-follicular. Toxic adenomas and Hurthle-cell adenomas are separated from other follicular adenomas because of special clinical and histologic features.

The existence of hyperfunctioning adenoma, while disputed, is accepted as a surgical and clinical entity. Vogue et al (cited by Farooki), demonstrated by radio-isotope studies that adenomas were the cause of hyperthyroidism in 13 per cent of the cases. Two such cases were reported in the present small series on the basis of radio-scan. Hurthle-cell adenomas can undergo malignant changes, and the cells appear bizzare and look malignant. Four cases, or 7.1 per cent of adenomas, were classified as Hurthle-cell adenomas. Fifty-six of the 126 (44.4 per cent) surgically removed thyroids contained 58 adenomas. Two (3.3 per cent) of these 56 cases contained 2 adenomas.

A solitary follicular adenoma was found in 50 thyroids removed at surgery, the 4 cases of Hurthle-cell adenoma and the 2 cases of double adenomas being excluded.

In agreement with many authors [9, 10, 11, 12] we do not distinguish between papillary adenomas and papillary carcinomas. All papillary tumors of the thyroid are classified as carcinoma. In the series being presented, 4 carcinomas were found, and these represented 3.5 percent of all thyroidectomies. Two of these were pure papillary and 2 mixed papillary follicular carcinoma. None of the cases of thyroiditis or multinodular thyroid showed evidence of malignancy.

Results of thyroid scans. Thyroid scans were performed on 95 of the 126 patients. Ten scans were reported as normal. The clinical diagnoses are compared with the final pathologic findings in these 10 cases and are tabulated in table 2. The pathologic diagnoses are correlated with results of thyroid scan in table 3.

TABLE 2: Clinical And Pathological Diagnosis In 10 Patients Having Negative Thyroid Scan

Clinical Diagnosis		Post-Operative Surgical Pathologic Diagnosis
Solitary adenoma	7	5
Multinodular goiter	2	2
Thyroiditis	1	2
Papillary carcinoma	0	1

In the remaining 85 cases, thyroid scan was confirmatory in establishing the existence of an underlying abnormality within the thyroid. In 42, or 49.4 per cent of these cases, the scan revealed a solitary cold nodule.

TABLE 3: Correlation Of Thyroid Scan With Final Diagnosis Included In The Table Are The Thirty-One Cases With No Scan

			Positive Scan						
Post-Operative Surgical & Pathological Diagnosis	No Scan	Negative Scan	Single Cold Nodule	Multiple Cold Nodule	Decreased Uptake	Unilat. Enlargement	Diffuse Enlargement	Warm Nodule	Total
Solitary Nodule (Adenoma)	17	5	26	0	3	0	4	1	56
Multinodular Goiter	10	2	7	3	6	5	7	1	41
Hashimoto's Disease	1	2	4	1	2	4	0	0	14
Parathyroid Cyst	1	0	0	0	0	0	0	0	1
Papillary & Mixed Cancers	2	1	1	0	0	0	0	0	4
Focal Lymphocytic Thyroiditis	0	0	1	0	0	0	0	0	1
Thyroglossal Duct Cyst	0	0	1	0	0	0	0	0	1
Granulomatous Thyroiditis	0	0	2	0	0	0	0	0	2
Double Follicular Adenoma	0	0	0	0	2	0	0	0	2
Involuted Hyperplasia	0	0	0	0	0	1	2	0	3
Normal Thyroid	0	0	0	0	1	0	0	0	1
Total	31	10	42	4	14	10	13	2	126

Discussion

Fowler[2] noted that during the period of 1936-1940 thyroid surgical admissions accounted for 14.8 per cent and in 1956-1959 for only 5.2 per cent of all general surgical admissions. He stated that in the years 1936-1940 toxic diffuse and toxic nodular goiter accounted for 44.6 and 34.8 per cent respectively of thyroid operations at an Illinois research hospital. During the same period nontoxic nodular thyroid and carcinoma of the thyroid were the reason for surgery in 17.7 and 2.1 per cent respectively. During the period of 1956-1959 only 35.4 and 21.5 per cent of operations were for toxic diffuse and toxic nodular goiter. Conversely, there was an increase in the number of operations for nontoxic goiter and carcinoma to 35.3 and 5.6 per cent respectively. This change in trend is well borne out by our data.

In the present series thyroid surgery constituted only 1.6 per cent of all surgical operations performed in this hospital during a 3-year period. The overwhelming majority of operations were undertaken because of clinical suspicion of a solitary nodule. Solitary adenoma was the clinical diagnosis in 85 instances and multinodular thyroid in 28 cases. Thus, almost 90 per cent of thyroid operations, in the absence of clinical evidence of toxicity, were performed for the sole purpose of exclusion of malignancy.

The 126 thyroidectomies showed follicular adenoma in 56 or 44.4 per cent, multinodular goiter in 41 or 34.2 per cent, thyroiditis in 17 or 13.5 per cent, and carcinoma in 4 or 3.5 per cent of the cases. Women accounted for more than 90 per cent of the patients.

These figures, except for thyroiditis, are fairly similar to those reported by others. In a series of 1,969 cases of thyroidectomies reported by Fowler[2] women accounted for more than 80 per cent. Nontoxic multinodular goiter was encountered in 35.3 per cent, solitary nodule in 20 per cent, carcinoma in 4.2 per cent, and thyroiditis in 2.1 per cent of the cases. Nunally[13] reviewed 573 thyroidectomies. One hundred twenty-eight cases were thyroiditis and hyperplasia. In the remaining 445 cases adenomas were found in 47 per cent, multinodular goiter in 19 per cent, localized carcinoma in 8.8 per cent, and carcinomas similar to those recorded in this paper in 4.2 per cent of the cases.

None of the adenomas was found to show evidence of malignant degeneration. This is in contrast to the experience of other authors. Meisner et al[14] reported malignant change in 24.6 per cent of solitary adenomas. Cole et al[15] reported this to occur in 37 per cent and Crile and Dempsey[16] in 24.5 per cent of their cases. On the other hand, Miller,[17] and Silverburg[18] found malignant degeneration in only 3 per cent of the cases of solitary adenoma. Farooki[19] reported 220 cases of thyroids examined at necropsy. Adenomas were found in 16.8 per cent of the cases, and none of these demonstrated evidence of malignant degeneration. Our findings are similar and indicate that evolvement of cancer in adenoma is rare. Generally, benign tumors remain benign and malignant tumors are malignant from their inception.

Occurrence of multiple adenomas is fairly frequent. Farooki reported an incidence of more than 1 adenoma in 6.5 per cent of a total of 1,013 adenomas in 905 surgical specimens. There were 2, or 3.3 per cent, double adenomas in this series.

Therefore, we conclude that the statement that true adenomas are always solitary is untenable.

Multinodular thyroid was found in 41 or 32.4 per cent of the cases. None of these contained cancer.

Thyroiditis was the diagnosis in 17 cases, or 13.6 per cent. Welch reported an incidence of 8 per cent among 3,024 surgical goiter specimens, and an incidence of 5.6 per cent was recorded by Fowler, who indicated that between the years 1936 to 1959 the incidence of thyroiditis increased 7-fold. It is interesting that in our small series twice as many cases of thyroiditis were found. There was no case of Riedel's struma. This is to be expected considering the rarity of this condition. According to Rose,[20] Woolner and co-workers only 20 verified cases of Riedel's struma were found among 42,000 thyroid glands examined over a period of 36 years.

The most common presenting evidence of thyroiditis was an enlarged thyroid with or without tenderness. Surprisingly enough, with 2 exceptions none of the thyroiditis cases was suspected pre-operatively on clinical grounds. The pre-operative clinical diagnosis was solitary nodule in 10 cases, including the 2 cases of subacute thyroiditis. The remaining cases were clinically thought to be multinodular goiter. In only 2 patients with smoothly enlarged thyroids was this diagnosis suspected. The radio-scan provided no helpful hint as to the underlying pathology. Fowler[2] reported an 8 per cent incidence of carcinoma in chronic thyroiditis. None of our 17 cases showed evidence of malignancy in spite of the very high incidence of thyroiditis.

The 4 carcinomas in this series were suspected clinically, and the scan (which was done in only 2 cases) was reported as normal in 1 and as a "cold" nodule in the other. Three of these patients were males and 1 a female. Two of the patients were white and 2 colored. On the other hand, the female to male ratio for solitary adenoma was 4:1. This high male-to-female ratio in thyroid cancer is unusual and undoubtedly is due to the fact that none of the carcinomas in this small series was thought to arise in a pre-existing adenoma.

The overall incidence of malignancy in our series is comparable to the reported incidence in larger series. Welch [22] recorded 110 carcinomas, other than the localized carcinomas, arising in solitary adenomas in 3,024 thyroidectomies over a 15-year [21] (IBID) period with an incidence of 3.5%. Two were pure papillary, and 2 were mixed papillary follicular carcinoma. Only 1 of the 4 patients was subjected to radical neck dissection, and lymph-node metastases were demonstrated in this patient.

Careful physical examination and pre-operative scanning of the thyroid is a combination needed to properly assess the patient for surgery.

There is no certain way to distinguish between benign non-toxic nodular goiter and carcinoma pre-operatively. This applies to thyroiditis as well. Were it not for this, surgical exploration could be avoided in a large number of cases.

The impossibility of distinguishing between patients with benign non-toxic nodular goiter and patients with clinical carcinoma and the inability of the pathologist to provide at times an accurate diagnosis on frozen sections supports the rationale for exploration of most enlarged thyroids.

Total lobectomy for single nodules and subtotal thyroidectomy for multinodular goiter have become acceptable forms of treatment. This is a sound approach as shown by Crile[22] who has provided evidence that incidence of development of metastasis is 10 times higher in patients with papillary carcinoma who require a second surgical operation after biopsy or incomplete removal.

Conclusion and Summary

Among 126 thyroid specimens removed surgically during a 3-year period at Cafritz Memorial Hospital, 56 (44.4 per cent) solitary adenomas, 41 (34.2 per cent) multinodular goiters, 17 (13.6 per cent) thyroiditis, and 4 (3.5 per cent) carcinomas were encountered.

None of the adenomas were found to have malignancy. We conclude that malignant degeneration of a benign adenoma is decidedly rare and that benign lesions of the thyroid remain benign and malignant lesions are malignant from their inception.

The primary reason for thyroid surgery is exclusion of malignancy. Most enlarged thyroids should be explored routinely. There is no certain way to distinguish between benign and malignant disorders of the thyroid gland pre-operatively.

Thyroid scans were done in 95 cases and proved accurate in 64.2 per cent of cases. Pre-operative physical examination proved equally efficient in detecting the presence of an abnormality but more accurate in assessing the nature of the disease.

Four cases of carcinoma were diagnosed–2 papillary and 2 papillary-follicular. Three of the patients were males and 1 a female. The low incidence and high proportion of males is misleading because of this small series.

(Continued on page 675)

Familial Polyposis
An Interim Report on a Family

EDWARD E. CORNWELL, JR.*, M.D., MASUD HOMAYOUNI†, M.D. AND
FRANCIS W. BLACKWELL‡, M.D.

FAMILIAL POLYPOSIS OF THE COLON is the most common of several genetic disorders manifested by intestinal polyposis. These conditions include discrete and occasional polyps, Peutz-Jeghers syndrome and Gardner's syndrome.[1]

Familial polyposis of the colon is inherited as a non sex-linked mendelian dominant trait, and is therefore transmitted by the affected persons to half of the offspring regardless of the sex of the affected parent.

In the affected families the disease may manifest itself early in life or may not become clinically apparent until adulthood. The findings are stereotyped and characteristic. The patient may complain of rectal bleeding or diarrhea. The large bowel is covered with numerous polyps of various sizes and configuration. The development of malignancy is inevitable and appears at an early age. It is frequently multicentric and grows rapidly. Total colectomy produces excellent results and often leads to spontaneous regression and disappearance of the polyps from the remaining rectal segment.[2] Untreated patients die at about the age of 40 of carcinoma of the colon.

It is the purpose of this paper to record the clinical, radiologic and pathologic findings of a recently encountered kindred with familial polyposis.

The Family

D.F. (The Proband). A 34-year old woman was hospitalized in 1969 because of profuse vaginal bleeding. While in the hospital she had a bout of diarrhea which culminated in evaluation of the gastrointestinal tract. Upon questioning, it became apparent that she had suffered periodically from episodes of diarrhea all her life. A barium enema revealed diffuse polyposis of the colon. On sigmoidoscopy the rectum was found to be covered with innumerable polyps (figure 1). The patient was admitted to Cafritz Memorial Hospital on November 10, 1969, and multiple polyps were removed from the rectum, none of which was malignant. A total colectomy and ileipoproctostomy was done. She has continued to do well since surgery. The specimen consisted of colon, ileocecal valve, and a 7 cm. segment of distal ileum (figure 2). Beginning just distal to the ileocecal valve and involving the entire colonic mucosa down to the distal margin of

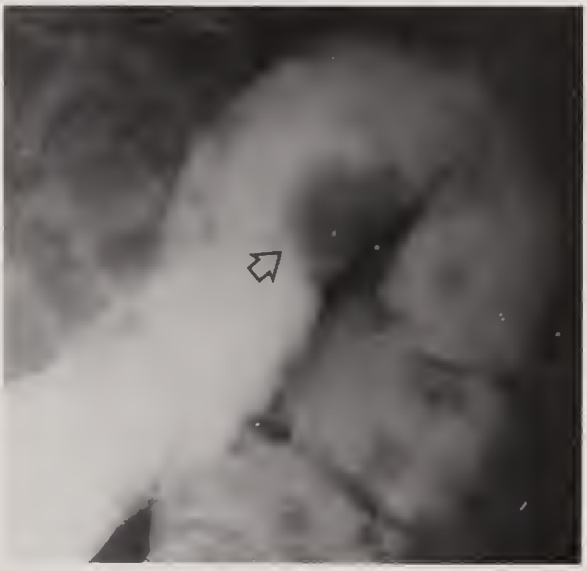

FIG. 1. Patient D.F. Barium enema showing multiple polyps of colon. Arrow shows malignant polyp.

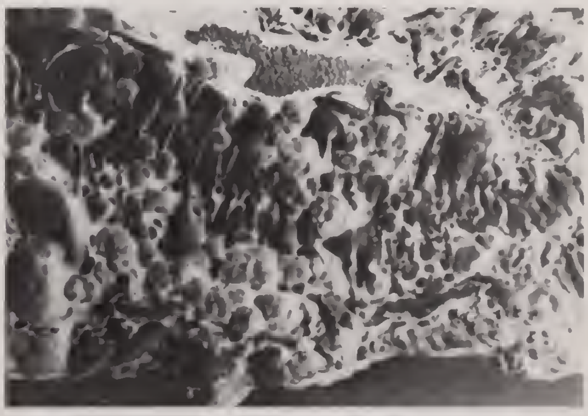

FIG. 2. Patient D.F. Specimen of colon with polyposis.

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resection were innumerable pedunculated and sessile polyps, varying in shape from slight elevation of mucosa to large polypoid tumors, and ranging in size from 0.2 cm. up to 4 cm. The polyps had a congested granular surface a fibrovascular stroma covered by a mantle of intact mucosa. None of the polyps demonstrated fixation or ulceration of the surface. The serosa of the colon was smooth and glistening, and lymph nodes were free of grossly recognizable lesions.

On microscopic examination the heads of the polyps were composed of partly normal and partly hyperplastic mucosa covering a normal submucosa. One of the larger polyps showed an area of abrupt transition from hyperplastic into obviously malignant mucosa. There was no invasion of the stalk, and regional lymph nodes were free of tumor.

On sigmoidoscopy in March, 1970 all but 1 of the polyps of the remaining rectal segment were seen to have disappeared. The patient has continued to do well since that time.

H.G., the father of the proband died of carcinomatosis due to carcinoma of the colon in 1959 at the age of 57. The only operative procedure was a transverse colostomy. Attempts to obtain details of the operative findings have been unsuccessful.

I.F. The 18-year old son of D.F. gave the history of an episode of rectal bleeding 2 years previously. On sigmoidoscopy the rectal segment of the colon found to be covered with innumerable polyps. He was hospitalized at Cafritz Memorial Hospital for barium enema examination and definitive care. The examination confirmed the clinical suspicion of multiple polyposis. One of the polyps in the transverse colon was large and was radiologically suspicious of malignant degeneration (figure 3). Most of the polyps of the rectal segment were removed, none of which was found to be malignant. On November 21, 1969 total colectomy and ileoproctostomy was done.

The specimen consisted of the colon, the ileocecal valve, and an 11 cm. distal segment of the ileum. The mucosa was covered with numerous polyps similar to the colon of D.F. but the polyps were fewer in number (figure 4). Microscopically all of the lesions were composed of hyperplastic mucosa covering a normal submucosa. However, a large polyp, 21 cm. above the ileocecal valve, showed an area of abrupt transition from hyperplastic to malignant epithelium, composed of closely packed glands lined by several layers of low columnar epithelium. The glands in this area showed back-to-back, intraglandular bridge formation. The cells demonstrated altered nucleocytoplasmic ratio and frequent abnormal mitosis. There was no invasion of the stalk. The regional lymph nodes were free of metastatic lesions.

Follow-up sigmoidoscopy in March, 1970 showed no evidence of residual polyps in the rectum.

D.F. The 15-year-old daughter of the proband was sigmoidoscoped because of the family history of polyposis. Several polyps were noted in the rectum. A barium enema examination in December, 1969 revealed polyposis of the entire colon. The mother and daughter recalled that the patient had diarrhea on several occasions and had also had rectal bleeding. It was planned at that time to admit D.F. to the hospital for total colectomy at the end of the school term. On June 26, 1970 the polyps of the rectal segment were removed and found to be benign, and numerous removed excrescenses were fulgurated. On July 6, 1970 the patient had an uneventful total colectomy and ileoproctostomy. The specimen consisted of the entire colon, with attached appendix and terminal ileum. The colon revealed approximately 20 polypoid masses arising from the mucosa. None was less than 3 cm. from the margin of resection and averaged 0.3 cm. in diameter.

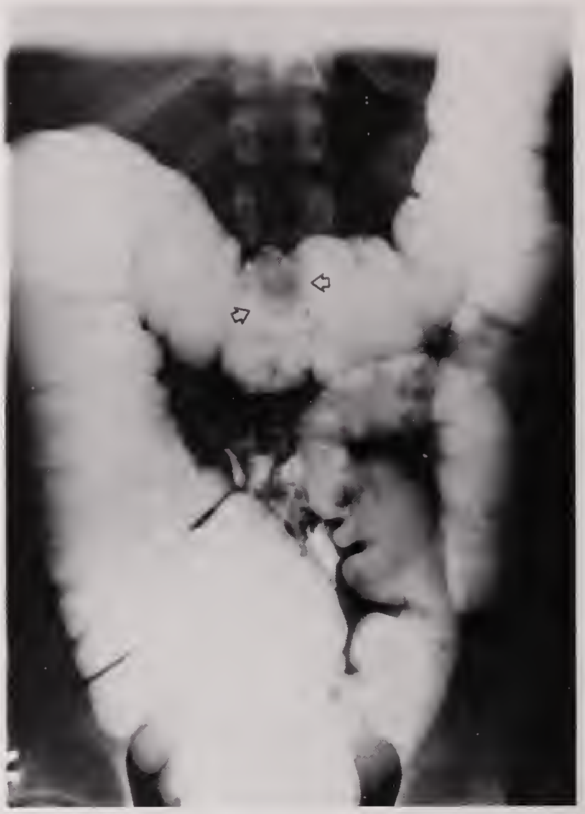

FIG. 3. Patient I.F. Barium enema showing multiple polyps of colon. Arrow shows malignant polyp of transverse colon.

On microscopic examination the polypoid masses within the colon revealed evidence of benign polypoid growth consisting of colonic glandular epithelium in an orderly fashion. The stroma showed evidence of lymphocytic infiltration. No evidence of malignancy was seen.

L.F., aged 12, daughter of D.F., was completely asymptomatic. Sigmoidoscopy and barium enema were negative.

S.F. The 11-year-old daughter was completely asymptomatic. She was sigmoidoscoped in December,

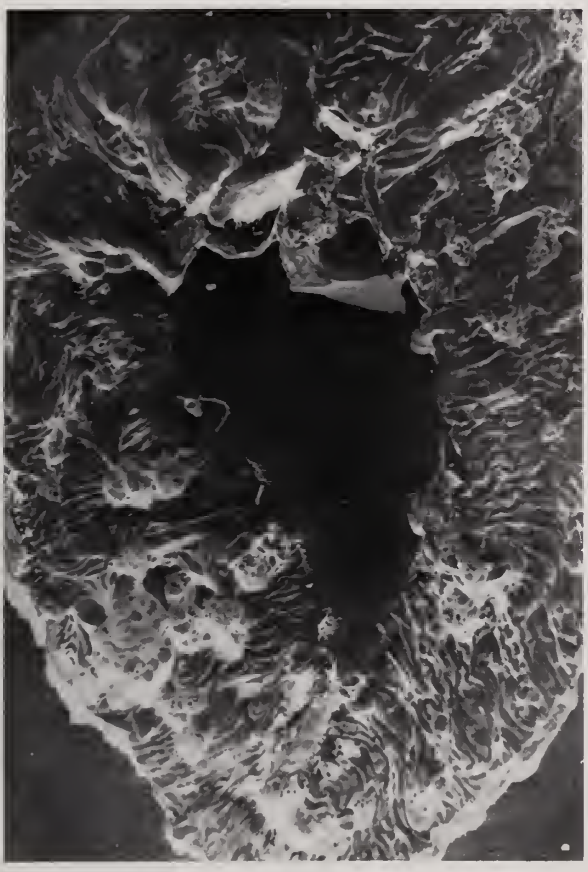

FIG. 4. Patient I.F. Specimen of colon with polyposis.

1969 and found to have 2 small rectal polyps and numerous mucosal excrescences of the rectal segment. Two barium enemas in December of 1969 failed to positively identify polyps of the colon. The patient was admitted to Cafritz Memorial Hospital on June 23, 1970 for another barium enema and removal of the polyps of the rectal segment. The enema showed several polyps in the left portion of the colon. On June 27, 1970 the polyps of the rectal segment were removed. All were benign. No further surgery is contemplated at this time. S.F. is of small stature and very frail. She will be followed by sigmoidoscopy and barium enemas, and when she is older a total colectomy and ileoproctostomy will be done.

On microscopic examination the fragments revealed areas of epithelial hyperplasia. The glands showed no evidence of malignant degeneration. No stalk was seen in the tissue examined.

J.F., aged 9, son of D.F., was completely asymptomatic. Sigmoidoscopic examination and barium enema were negative.

Discussion

Multiple familial polyposis of the colon is a genetic condition inherited as an autosomal dominant trait. Sporadic cases apparently due to gene mutation occur, although some of these can be explained on the basis of inadequate examination of kindred. The colon is studded with innumerable polyps of variable sizes and shapes which produce symptoms of bleeding and diarrhea early in life. The average onset of symptoms is 20 years, and symptoms rarely commence after 40 years of age. There is a high incidence of malignancy, and the untreated patient usually dies from carcinoma of the colon prior to age 40.[1] The average age at death from this cause is 41.6 years, or 26.3 years younger than the age for rectal carcinoma in general.

When a diagnosis of familial polyposis is made in a member of a family, the kindred of the patient should be examined sigmoidoscopically and by barium enema. Since the incidence of carcinoma is high, often the presenting symptoms are due to the malignancy. The sigmoidoscopy should be repeated often. If no rectal polyps are present by the age of 40, that particular member has probably been spared. The treatment of choice consists of total colectomy with ileoproctostomy. The rectal segment should be spared, since spontaneous regression of the polyps in the rectum is the rule rather than the exception.[5] However, this does not obviate the need for periodic inspection of the rectal segment for the remaining life of the individual. These points are well borne out by the kindred (figure 5).

Chance discovery of polyposis in the proband constitutes the basis for discovery and treatment of this condition in several members of the family. It should be emphasized that the symptoms may be sufficiently trivial that either the patient fails to

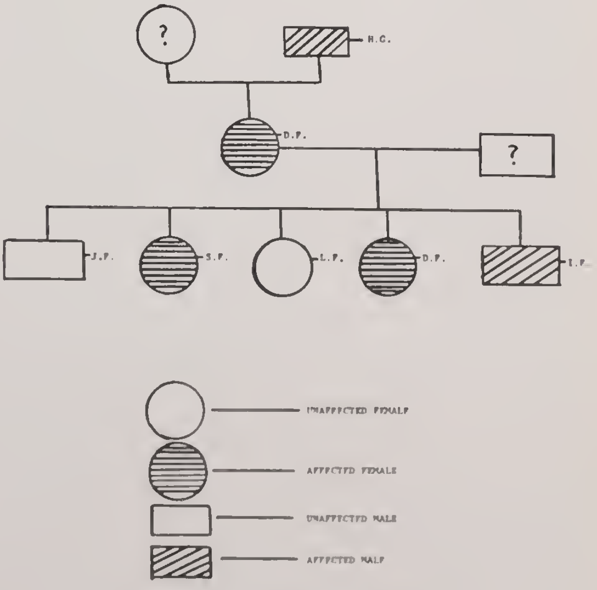

FIG. 5. Gentic diagram of family.

relate it to the physician or the physician may not attach sufficient significance to the symptoms to undertake the necessary diagnostic studies.

In our family the proband had suffered from bouts of diarrhea all her life, but diagnostic studies were not initiated until she was hospitalized for the unrelated condition of vaginal bleeding. A bout of diarrhea while in the hospital lead to the diagnosis of polyposis. Similarly, the son, I.F., had an episode of rectal bleeding 2 years previously, was hospitalized elsewhere, transfused, and discharged.

Familial polyposis should be differentiated from the several genetic disorders associated with polyposis of the colon: Peutz-Jeghers syndrome, Gardner's syndrome, and discrete and occasional polyps. The Peutz-Jeghers syndrome is inherited as an autosomal dominant trait. Melanin spots of the buccal mucosa, the lips, and digits are associated with the polypoid lesions. Polyposis of the small intestine is a constant feature. These may be solitary, multiple, or diffuse.[3] Although the polyps occur predominantly in the small bowel, polyps in other parts of the gastrointestinal tract are frequent.

Histologically the polyps are composed of all types of cells normally seen in the small intestine, together with irregular bands of smooth muscle. The polyps are thought to represent harmartomas, and malignant degeneration is unusual. Reservation, however, is in order as to benignity of the polyps of the colon and stomach in Peutz-Jeghers syndrome. The clinical picture is similar to familial polyposis in that anemia, rectal bleeding and diarrhea may be the presenting disorder. Intussusception is a common finding in this disorder. The small intestinal polyps should be treated in a most conservative manner because of the low incidence of malignancy. The colonic polyps, if massive, may be treated similarly to familial polyposis, always sparing the rectum. Gardner's syndrome consists of the concurrence of osteomas, soft tissue tumors, and colonic polyps. Sebaceous cysts and cutaneous fibromas also occur. These cases resemble the colonic polyposis in their tendency to malignant degeneration. Malignant changes in duodenal polyps have been described. Genetic factors are thought to play a part in isolated and discrete polyps of colon and rectum. In this condition the polyps are scattered and few. Although malignant degeneration is unpredictable, there is a high incidence of colonic malignancy in relatives of a patient who dies from colonic carcinoma associated with this type of polyposis. The affected members of a given kindred always show this type of polyposis and never the familial type of multiple polyposis. The converse is also true.

Summary

Familial polyposis and the major genetic disorders involving polyposis of the gastrointestinal tract have been discussed, and a history of a kindred group has been presented. Patients with familial polyposis who are untreated die of cancer of colon at an early age. Each affected member of a family should have total colectomy and ileoproctostomy when polyps are discovered. Preservation of the rectal segment is advised. Periodic examination of the rectal segment is mandatory.

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A Three-Year Experience with a Coronary Care Unit at the Morris Cafritz Memorial Hospital*

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THE CONCEPT of coronary care units in the treatment of acute myocardial infarction is now well recognized. Since the 1963 report of Day and Brown[1] of an intensive coronary care area there are probably several hundred CCU's throughout the United States. It would be superfluous to report our experience at Cafritz Memorial Hospital in this well-documented area of study were it not for certain differences in our application of this method of specialized care from the opening of the unit. The role of the specially trained coronary care nurse has been pre-eminent.

Cafritz Memorial Hospital opened its doors to patient care on April 12, 1966. Although designed as a 400-bed general hospital with all modalities represented in the general realm of community care, a coronary care unit was not planned by the architect. At the time the hospital opened it was recognized that such a unit was needed and plans were made to convert a 1,250 square-foot area on the eighth floor to a 8-bed ICU with 4 monitored CCU beds. In preparation for this a course for training nurses to work in this specialized area was instituted, and coincident with the physical completion of the ICU on November 1, 1966 our first class of 8 CCU nurses was graduated. They had completed a 3-month course after 250 hours of classroom instruction and drills in resuscitation and pharmacologic and electrical treatment of arrhythmias.

From the beginning it was recognized that CCU and ICU would have to be contiguous not only from the standpoint of specialized nurse-staffing and use of equipment but also from the standpoint of available space. That we were correct in this assumption was made manifest when with the increased patient population of a newly opened hospital, approximately 1 year later, our experience having been favorable, we enlarged to 14 ICU beds with 8 CCU monitored beds and an immediately adjacent wing of 6 ICU medical-surgical beds with all ICU nurses trained in an identical program so as to be interchangeably employed in either unit.

The paramount role of the nurse is essential since Cafritz Hospital is not presently approved for internship and residency programs by the JCAH. Accordingly, in the 8 successive training programs which have been held in the past 3½ years, the cardiology staff has stressed the need for our nurses to be able to readily identify not only the life-threatening arrhythmias and catastrophes which affect the coronary patient, but also those premonitory signs of impending arrhythmias which presage a fatal outcome. Although our dependence on the trained nurse, as well as male coronary care technicians, had been dictated by necessity, it is now recognized in those CCU areas which are run successfully, that the well-trained nurse who is always in attendance and trained in preventive pharmacologic therapy, defibrillation, and cardioversion techniques, is superior to interns and residents rotating through an area of coronary care. This conclusion is based on our statistics which compare favorably with other units in the United States, some with interns, residents, and cardiac fellows, and reflect our nurses' ability to react immediately to prevent life-threatening arrhythmias and provide electrical conversion when needed.

Since we had trained our nurses to recognize those premonitory signs which indicate impending ominous cardiac events, a protocol was established so that trained CCU nurses could institute primary pharmacologic therapy while awaiting the arrival of the physician. The success of this method has been apparent from its initiation. One measure of the success of the protocol has been the decreasing number of patients who have required defibrillation or cardioversion for either ventricular fibrillation or ventricular tachycardia. The other measure of success has been the relatively minor changes required in making the protocol adaptable to more recent advances in the treatment of those arrhythmias peculiar to the coronary patient.

The protocol was established so that trained CCU nurses could give Lidocaine by bolus intravenous drips with the occurrence of 6 or more premature ventricular contractions per minute according to the method of Lown.[2] If PVC's were closely coupled, bidirectional, and not responsive to Lidocaine, I.V. quinidine gluconate was utilized as the second choice drug. Procainamide is similar in action to Lidocaine and might not work when Lidocaine has failed. Propanalol and diphenylhydantoin have been used sparingly. Major stress has been placed upon possible digitalis intoxication, hypokalemia as a result of antecedent thiazide diuretic administration, and low-energy cardioversion. The nurses have been able to recognize second and third degree heart block and to institute isoproterenol by I.V. drip so that temporary-demand transvenous pacemakers can usually be placed by the thoracic surgeons as a non-emergency procedure.

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The diagnosis of acute myocardial infarction is established by examining serial serum enzymes (CPK, SGOT, LDH) and serial electrocardiograms performed daily for the first 3 days in the hospital. Patients with left bundle-branch-block who have significant rises in blood enzymes are also diagnosed as having an acute myocardial infarction. Suspect coronary patients are those who had chest pain but do not exhibit enzyme or electrocardiographic changes of acute myocardial infarction. Portable chest roentgenograms are taken on the first or second hospital day and are very helpful in determining the presence of incipient or occult congestive heart failure and in some cases, suspected pulmonary embolization.

Our statistics were as follows for the total 3-year period dating from November 1, 1966 through October 31, 1969:

973 Total admission to CCU suspected as acute cardiac emergencies
406 Definitely proven myocardial infarction (MI) by ECG or enzymes
77 Deaths among proven MI's for a mortality rate of 19 per cent
166 MI's treated with drugs by nurse according to protocol or 40.9 per cent treated for arrhythmias
69 Cardioverted or defibrillated by nurse or M. D. for ventricular fibrillation ventricular tachycardia, mainly done by nurse or 17 per cent

The annual breakdown is as follows:

First Year (November 1, 1966 through October 31, 1967)

205 Total cardiac admissions to CCU
91 Definitely proven MI's by ECG or enzymes
20 Deaths among proven MI's for a mortality rate of 21.9 per cent
53 Treated with drugs by nurse according to protocol, or 58.2 per cent
26 Cardioverted by nurse or M. D. for V. F. or V. T. or 28 per cent

Second Year (November 1, 1967 through October 31, 1968)

301 Total cardiac admissions to CCU
118 Definitely proven MI's by ECG or enzymes
27 Deaths among proven MI's for a mortality rate of 22.9 per cent
51 Treated with drugs by nurse according to protocol, or 47.5 per cent
15 Cardioverted by nurse or M. D. for V. F. or V. T., or 14.2 per cent

Third Year (November 1, 1968 through October 31, 1969)

467 Total cardiac admissions to CCU
197 Definitely proven MI's by ECG or enzymes
30 Deaths among proven MI's for a mortality rate of 15.2 per cent
62 Treated with drugs by nurse according to protocol, or 31.4 per cent
28 Cardioverted by nurse or M. D. for V. F. or V. T., or 14.2 per cent

In the absence of a house staff trained in the therapy of the complications of coronary patients, the highly trained, well-motivated coronary care nurse becomes the touchstone upon which the success or failure of the CCU in any hospital will stand or fall. It should be noted that the success of any program which gives the CCU nurse this authority will not prevail if she does not receive the proper training and backing from the cardiology staff to insure an instant reaction on her part to cardiac events which require aggressive, intelligent action.

Upon this premise our CCU has been developed and implemented. The importance of this basic fact is highlighted by the absence of a house staff in over 50 per cent of the hospitals in the United States. It would therefore seem apparent that, if some means to cope with the acute myocardial infarction patient in these hospitals is not forthcoming, a large percentage of patients will not be able to take advantage of the improvements resulting from such care.

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Study of Thirty-Two Autopsied Patients Who Died of Myocardial Infarction*

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THE LITERATURE CONTAINS many studies demonstrating the reduction in mortality associated with acute myocardial infarction as a result of utilizing Coronary Care Units.[1] Most reports mention cardiac deaths in support of reduced death rates, but few have investigated all deaths due to acute myocardial infarction within a hospital regardless of the patient's location.

Procedure

Thirty-two patients treated at Cafritz Memorial Hospital were autopsied from September 17, 1967 through November 21, 1969. The principle cause of death was acute myocardial infarction, as determined by autopsy. The hospital charts were reviewed to determine whether optimum care was given to these patients. Optimum care was determined on an individual basis according to the complete medical record and the circumstances in each case. Four main categories emerged: Category I, 21 patients admitted from the Emergency Room to the Coronary Care Unit who died in the Coronary Care Unit. Category II, 2 patients transferred from the Coronary Care Unit to Intermediate Care who died there. Category III, 3 patients admitted to regular medical care with an admitting diagnosis of congestive heart failure or to rule out myocardial infarction who died without benefit of the Coronary Care Unit. Category IV, 6 patients admitted to regular medical care not for arteriosclerotic heart disease, but who died there of acute myocardial infarction. The average age of patients was: Category I, 62 years, Category II, 55 years, Category III, 61 years, and Category IV, 62 years. The average length of hospital stay was 5-1/2 days, 7-1/2 days, 14 hours, and 23 days for the 4 categories, respectively. The average time it took the patients to travel from the Emergency Room to the Coronary Care Unit in Category I was 1 hour and 15 minutes. The time it took for patients in Category III to go from the Admitting Office or Emergency Room to the medical floor was not known in every case but ranged from 2 hours, 15 minutes to 3 hours.

The Emergency Room staff carried out closed chest cardiac massage, mouth-to-mouth resuscitation, Ambu bag assisted breathing, and defibrillation. Alpha and beta adrenergic drugs and hydrocortisone hemisuccinate were also used before transfer to the Coronary Care Unit. This unit is on the eighth floor of the hospital and the maximum distance from the Emergency Room. The records did not show deaths in the halls or on the elevators. Patients who lived the shortest time were in Category III, about 1/2 day. This compared to 5 to 7 days in Categories I and II, corresponding to the period in which a life-threatening arrhythmia or cardiogenic shock is most likely to occur. Patients in Category IV could have been moved into the Coronary Care Unit if an acute myocardial infarction was suspected. Only 1 of these 6 patients had a record of chest pain. Four had no record of chest pain, and 1 was unconscious. One patient in Category II had a gastrojejunostomy for gastrointestinal bleeding and was in the surgical Intensive Care Unit before transfer to intermediate care. The other patient in Category II probably died of an arrhythmia and might have benefited from telemetry monitoring if it had been available. At autopsy this patient had pin-point narrowing of the coronary arteries without visible evidence of an acute thrombosis and had normal enzymes and negative electrocardiograms for acute infarction while in the Coronary Care Unit. In Categories I and II an attempt was made to correlate autopsy findings with serial serum enzymes, electrocardiograms, and portable chest roentgenograms. Routine CPK, SGOT, LDH, and electrocardiograms were done daily for the first 3 days, and a portable chest roentgenogram taken on the second day. Non-terminal life-threatening arrhythmias and successful cardioversion, defibrillation, or use of a temporary demand pacemaker were recorded.

Serum enzymes were reliable. In Category I, 14 patients had elevated enzymes, 6 did not live long enough for blood to be drawn, and 1 died on the twenty-first day with enzymes normal on days 1 and 2 with no subsequent determinations. In Category II enzymes were normal in 1 patient who probably died of acute arrhythmia. The other patient had major abdominal surgery and would therefore have had a disturbed enzyme pattern. In Category III enzymes were not obtained in 2 patients, and in the other, SGOT was normal on admission and significantly elevated on the second day. This patient complained of chest pain, had widespread ischemia on electrocardiogram, and could have been transferred to the Coronary Care Unit on the basis of this information. In Category IV enzymes were elevated in the 4 patients in whom they were obtained. The one patient in this group who had chest pain also had electrocardiographic evidence of acute infarction and could have been transferred to the Coronary Care Unit.

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Standard 12-lead electrocardiograms were less reliable than enzymes. In Category I, 11 of 21 patients had confirmation of acute myocardial infarction. In Categories II and III acute myocardial infarction was not confirmed. In Category IV, 2 of 6 patients had confirmatory electrocardiograms. (Left bundle-branch-block is considered non-confirmatory.)

Autopsy locations of the acute infarct in the 10 patients in Category I who did not have electrocardiographic confirmation are shown in table 1.

Since 6 of these patients in the Coronary Care Unit had primarily posterior infarctions, vectorcardiograms might have been helpful in providing confirmation. It is interesting to note that 7 of the 10 patients who did not have electrocardiographic confirmation had old infarction. The location of the old and acute infarctions did not fall into any particular pattern that would easily explain lack of electrocardiographic confirmation.

Roentgenographic suggestion of congestive heart failure was present in 11 of 21 patients in Category I. Six patients had no evidence of congestive heart failure, and 4 did not live long enough to have a portable chest roentgenogram. In Category II, 1 patient presumably had a sudden arrhythmia and no antecedent evidence of congestive heart failure. The patient who had surgery had evidence of congestive heart failure. In Category III, 2 patients had evidence of congestive heart failure on physical examination, and 1 had no chest roentgenogram. In Category IV, 5 of 6 patients had evidence of congestive heart failure.

TABLE 1: Locations of Infarcts at Autopsy

Pt. no.	A	S	L	P	Ap	R.V.	Old Infarction + or –	Location
1	A		L			R.V.	–	
2				P			–	
3				P	Ap		+	A-S-P-Ap
4*	A	S	L	P	Ap		+	L-P
5		S	L	P			+	A-S
6		S		P			+	S-P
7	A	S					+	A-S
8†	A	S					–	
9		S		P			+	P
10				P			+	A-L

Key: Anterior = A, Septal = S, Lateral = L, Posterior = P, Apical = Ap, Right ventricle = R.V., Present or absent = + or –.

* Infarct involving entire left ventricle.

† E.C.G. showed left bundle-branch-block.

Non-terminal life-threating arrhythmias are considered to be ventricular tachycardia, ventricular fibrillation, and progressive second or third-degree heart block causing inadequate perfusion to the brain, kidneys, or extremities. These responded to cardioversion, defibrillation, isoproteronol by intravenous drip or demand pacemaker. Category I is the only group in which this occurred. Four patients responded initially to this treatment.

In Category I digitalis was used in 14 patients, all of whom had clinical evidence of congestive heart failure in the past or on admission, indicating good correlation with roentgenographic findings. One patient in congestive heart fialure not receiving digitalis had alpha and beta adrenergic drugs and demand pacemaker for idioventricular rhythm. This was considered proper treatment. In contrast, 1 patient who had a documented acute lateral-wall infarction 10 months previously had an acute diaphragmatic-wall infarction on her last admission, exhibited congestive heart failure, received digitalis and 256 milliosmoles of mannitol in 250 cc. of 5 per cent dextrose in water followed by peritoneal dialysis. The use of plasma expanders is contraindicated in a patient in congestive heart failure due to an acute myocardial infarction.[2,3] Two patients exhibited severe hypokalemia.

The first patient was in Category I with a serum potassium of 1.7 mEq/L on admission probably related to antecedent thiazide diuretic administration, was successfully defibrillated in the Emergency Room, cardioverted 4 times in the Coronary Care Unit, received oral potassium chloride, had a serum potassium of 5.3 mEq/l on the fourth hospital day, and died on the eleventh hospital day. This patient, in addition to several areas of acute myocardial necrosis (myocytolysis) consistent with acute infarction, had multiple pulmonary emboli with infarctions and healed aortic valvulitis. Intravenous potassium chloride may have helped if administered when the very low serum potassium was reported by the laboratory about 4 hours after admission.[4]

The second patient was in Category II; he had a serum potassium of 2.8 mEq/l on admission after severe hematemesis and prior to subtotal gastrectomy, vagotomy, and gastrojejunostomy. He had a serum potassium of 4.5 mEq/L on the day of cardiac arrest, in the bathroom in the Intermediate Care Area.

Conclusions

Two of the 21 patients in Category I were considered to have not received optimal care on the Coronary Care Unit. Six patients who died of acute diaphragmatic infarctions not diagnosed on standard 12-lead electrocardiograms might have benefited from vectorcardiograms. One of 2 patients in Category III might have benefited from telemetry monitoring if it had been available. The 3 patients in Category II should have been admitted to the Coronary Care Unit. The longest survival time in this group was 31 hours. One patient of 6 in Category IV complained of chest pain, had widespread ischemic electrocardiographic pattern changes, and should have been transferred to the Coronary Care Unit. The remaining 5 patients in this group did not complain of chest pain. One diabetic patient was unconscious and hypoglycemic. This information may provide further insight into patient-care in the Coronary Care Unit and elsewhere in the hospital among patients who did not survive. Some suggestions have been offered which might have improved their care. This discussion shows that 10 of 32 patients might have benefited from the suggestions offered.

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Non Toxic Thyroid Disease–Cox and Homayouni

(Continued from page 666)

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Treatment of Chronic Cervicitis by Cryosurgery[*]

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AND HENRY S. GERING, M.D., F.A.C.O.G.

CRYOSURGERY HAS BEEN DEMONSTRATED to be an effective modality in the treatment of chronic cervicitis. It is a fast, safe, and inexpensive means of treating unanesthetized patients in an office.[1,2]

Cryosurgery involves the use of a refrigerent which destroys tissue in situ, and then allows the disease area to sluff and subsequently to heal.[3]

Material and Methods

This series consisted of 105 patients receiving cryosurgery to the uterine cervix for treatment of chronic cervicitis. Twenty patients were treated on 2 occasions for a total of 125 treatments between March 1969 and June 1970.

Liquid Freon was used at an operating probe temperature of −50° to −60° for a time period of 4 minutes. A special probe was used to deliver the Freon.[*] Patients were seen after treatment at 3 and 7 weeks, and the response to treatment was evaluated (figure 1).

Symptoms

Three patients were bleeding after having been discharged from the hospital subsequent to a D and C, cervical punch biopsy, and electric cauterization of the cervix. Cryosurgery was used to control the bleeding rather than suturing the cervix.

Leukorrhea was the presenting symptom in the remaining 102 patients, many of whom had been treated on multiple occasions by vaginal creams, vaginal suppositories, or chemical and electric cauterization without success.

Dyspareunia was a symptom in 6 patients along with leukorrhea.

Condition of the Cervix Before Treatment

All the patients' cervices were evaluated before treatment and rated 1+ to 4+ (table 1.).

TABLE 1: Condition of the Cervix

Rating	No. of Patients	Description of Cervix
1+	6	Slight erosion
2+	28	Moderate erosion (the cervix shown in figure 1A would be rated 2+)
3+	38	Severe erosion
4+	33	Severe erosion plus cervical cyst, polyps, or lacerations

Symptoms During and After Treatment

Forty-seven patients experienced no unusual symptoms during the procedure. Fifty-eight experienced what they described as mild menstrual cramps. No patient described symptoms that were moderate or severe, and no procedure had to be discontinued.

Patients that had been treated previously by electric cauterization were impressed by the lack of discomfort with cryosurgery.

After treatment a clear watery discharge which often lasted 7 to 10 days was the most annoying symptom. Slight genital bleeding occurred in several patients. There was no evidence of systemic complications directly related to cryosurgery.

Results

Anatomic results were excellent to good in 100 of the patients (table 2.). The post-cryosurgical appearance of the cervix in figure 1 D would be considered a good result.

TABLE 2: Anatomic Results of Treatment

Results	No. Patients	Per cent Patients
Excellent	68	64.7
Good	32	30.4
Fair	0	0
Poor	3	2.8
Lost to follow-up	2	1.9

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[*] From the Department of Obstetrics and Gynecology, Cafritz Memorial Hospital, Washington, D. C.

[*] Manufactured by Frigitronics, Inc., Bridgeport, Connecticut

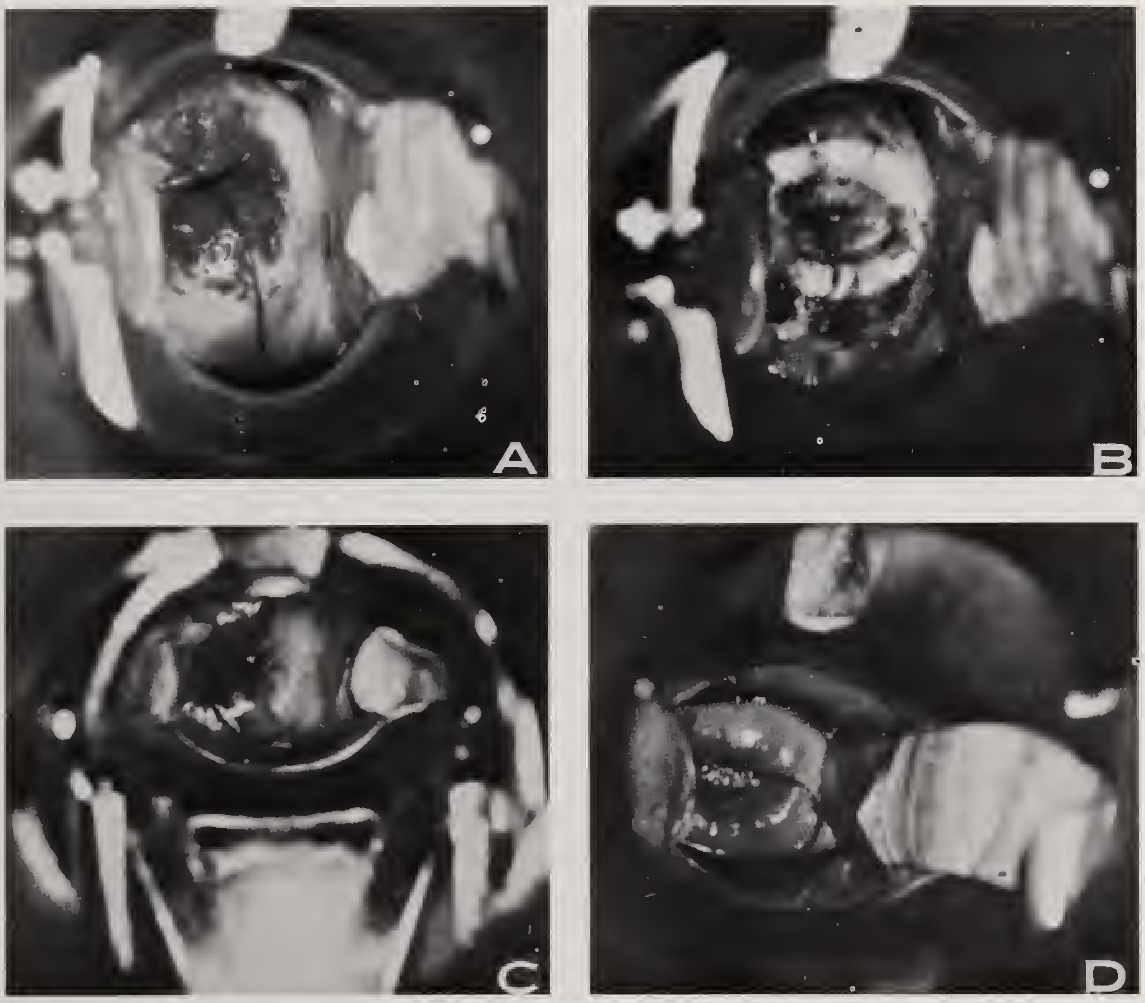

FIG. 1. Response to treatment.

Symptomatic results were excellent to good in 100 of the patients complaining of leukorrhea (table 3.). Patients complaining of dyspareunia all had improvement. The 3 patients bleeding from cervical biopsy had their bleeding stop following cryosurgery.

Discussion

Cryosurgery has been shown to be an effective and safe form of treatment of chronic cervicitis. Ninety-five per cent of the patients in this series were successfully treated. All of the patients were treated in a physician's office and none was anesthetized. Therefore, this procedure saved the patient the expense of hospitalization and the dangers of an anesthetic.

Four patients have become pregnant since treatment, and 1 has successfully delivered a baby. Cryosurgery does not seem to have any effect on future pregnancies and deliveries.[4]

TABLE 3: Symptomatic Results of Treatment

Symptom	Results	No. Patients	Per cent Patients	Description
Leukorrhea (100 patients)	Excellent	73	69.5	Cessation of symptoms
	Good	27	25.7	Marked improvement but a minimal discharge persisted
	Fair	0	0	
	Poor	3	2.8	Little or no improvement
	Lost-to follow up	2	1.9	
Dyspareunia (6 patients)	Excellent	2	33	Cessation of symptions
	Good	4	67	Marked improvement but minimal discomfort persisted

In many patients the cervix decreased in size following treatment but no patient developed cervical stenosis.

One patient developed vulvar condylomata acuminata following treatment, but there were no cases of cervical condylomata acuminata as have been reported by others.[4]

There were no changes in menstrual flow or menstrual discomfort reported by any patient.

Summary

Of 105 patients 95.2 per cent were effectively treated for chronic cervicitis by cryosurgery.

Leukorrhea, dyspareunia, and post-cervical biopsy bleeding were effectively treated by cryosurgery.

There were no systemic side-effects, and a copious watery discharge lasting approximately 1 week was the most serious side-effect.

Minor to no discomfort was experienced by the patients during treatment. In no case did the procedure have to be discontinued because of discomfort.

Cryosurgery is superior to electrocautery and other methods of treating chronic cervicitis.[5]

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Adenocarcinoma of Appendix–Peacock and Bunales

(Continued from page 685)

pre-operative diagnosis. The specific diagnosis in most cases is made after pathologic study of the specimen.

Of the 16 cases, 9 had appendectomy, 3 had appendectomy plus limited resection of the cecal area, 2 had right colectomy, and 2 had radical surgery. Postoperative irradiation therapy has apparently been used only rarely in patients with malignant lymphoma of the appendix. The outcome in these series showed 10 living and well at from 5 months to 8 years with no known recurrences, 2 dead of recurrences at 9 and 10 months, 3 dead but with the cause of death not given, 2 operative deaths, and 1 lost to follow-up. Those having right colectomies were living and well at 3 and 8 years, while those treated by radical surgery were both living and well at 5 years.

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The Use of a Vascular Catheter in the Gastrointestinal Tract

Report of a Case

LOUIS WENER, M.D.*

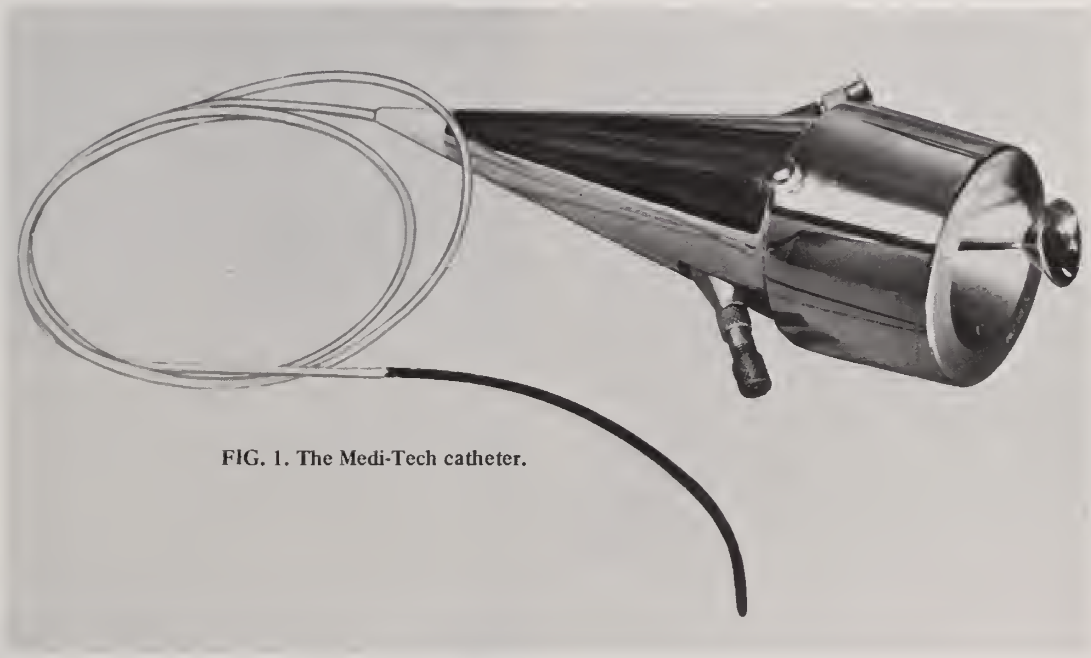

FIG. 1. The Medi-Tech catheter.

A NEW VASCULAR CATHETER has recently been developed which permits external manipulation of its multidirectional tip by means of wires incorporated within the catheter walls (figure 1).[1] This instrument has proved extremely versatile in angiographic study of secondary vessels such as the hepatic and hypogastric arteries. Tertiary vessels, such as the gastroduodenal artery and the adrenal veins, may also be catheterized. A new and life-saving use for the catheter was demonstrated when a post-gastrectomy patient developed complications.

Report of a Case

C.C., a 51-year-old white man complained of intermittent right upper quadrant and mid-epigastric pain without nausea, vomiting, or weight loss for approximately 12 months prior to admission. One day prior to admission he became weak, thirsty, and diaphoretic, and had a tarry stool. He vomited coffee-ground material. Physical examination on admission revealed an acutely ill male. Supine blood pressure was 140/80 with a pulse rate of 104 per minute. With the patient erect the pulse rose to 160 per minute and the blood pressure dropped to 128/76. There was tenderness to deep palpation in the right upper quadrant, and the rectal examination revealed soft, black, guaiac-positive stool. Admission laboratory data revealed: Hemoglobin, 7.4 Gm, hematocrit 27 per cent and white blood cells 13,200 per cu. mm. Upper gastrointestinal X-ray examination was incomplete due to 80 per cent gastric retention of the barium and retained secretions.

The clinical impression was subtotal gastric obstruction secondary to a bleeding peptic ulcer. Blood transfusions and fluid replacement therapy were initiated. Bleeding continued, however, and the patient was taken to surgery on the 5th hospital day. At laparotomy, a Polya subtotal gastrectomy and vagotomy were performed without incident. The duodenal stump and anastomosis were closed with a mechanical suturing device.†

The postoperative course was initially uneventful. The patient began to complain of right upper quadrant pain, and spiking temperatures were noted on the 4th postoperative day. Radiographic and isotopic studies suggested subphrenic abscess (figure 2), and a right subcostal tap produced considerable quantities of gas and bile. A Penrose drain was inserted. The cultures grew out *Aerobacter Aerogenes.*

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* From the Department of Radiology, Cafritz Memorial Hospital, Washington, D. C.

† Auto Suture (R), available from USA Surgical Corp., N.Y., N.Y.

In spite of judicious fluid management and massive antibiotic therapy the patient continued to do poorly. Six days following drainage of the subphrenic abscess the Medi-Tech† catheter was manipulated into the afferent loop, and the duodenal leak was demonstrated (figure 3). The primary route of drainage was infrahepatic, to the right paracolic gutter, and lateral to the liver. The catheter was replaced with a # 240 polyethylene tube (figure 4). This was connected to suction and was productive of copious drainage.

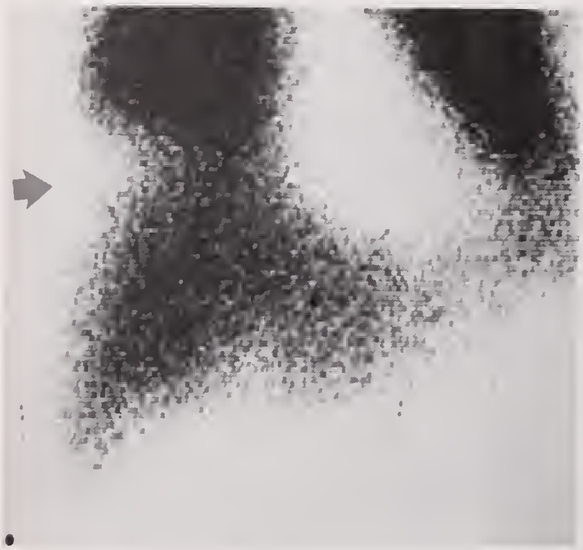

FIG. 2. Combination liver (198 Au), lung (131-I MAA) scan demonstrating the wedge-shaped defect (arrow) caused by the subphrenic collection. This space would normally be occupied by MAA containing lung in the right costophrenic sulcus.

Gradually the patient improved on antibiotic and fluid therapy, including multiple blood transfusions. Approximately 1 month later the patient was operated upon and the duodenal fistula was found to be healed. A small loculated subhepatic abscess was drained, and an enteroenterostomy between the afferent and efferent limbs were accomplished. The patient has gained approximately 50 pounds and when last seen was greatly improved.

Discussion

Post-gastrectomy duodenal leakage was reported by Carillo[2] as a complication in 13 per cent of his

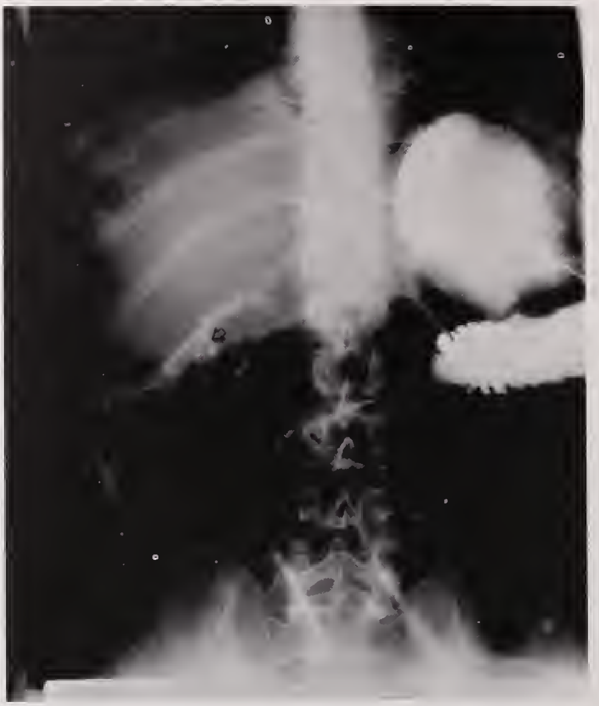

FIG. 3. Abdominal film showing the catheter in the dilated afferent loop. The site of the duodenal leak is indicated by the arrow. Contrast material is seen beneath the liver and in the right paracolic gutter.

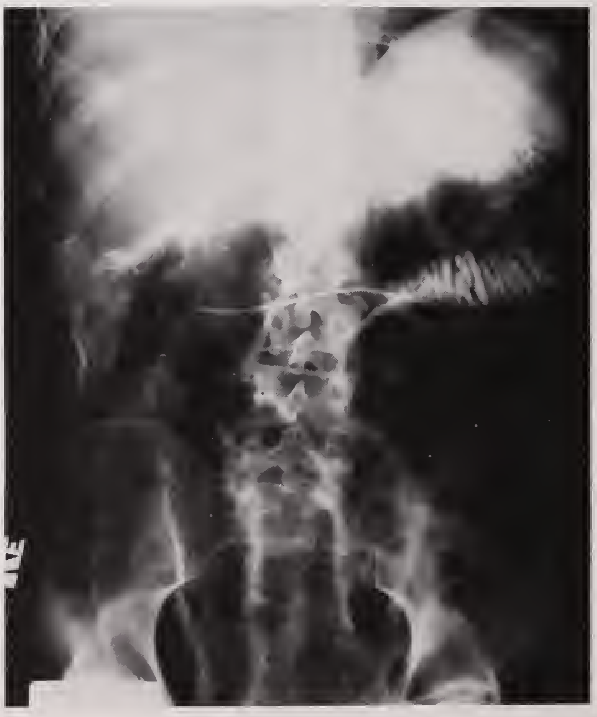

FIG. 4. Abdominal film following replacement of the catheter with the polyethylene drainage tube. The PE tube is ipacified by contrast material to check its position.

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† Medi-Tech (R), available from A. F. Morrison Co., Inc., Wilton, Conn.

series and carried a mortality rate of 41 per cent. The anterior Polya gastrectomy with its attendant long afferent loop seems particularly prone to this complication. Several of our surgical staff believe the use of mechanical suturing device may contribute to the appearance of post-gastrectomy duodenal leakage. In this case the afferent loop was apparently subtotally obstructed, resulting in a rise in duodenal pressure and fistula formation. The continuing loss of duodenal contents and the overwhelming sepsis were rapidly becoming unmanageable.

Duodenal decompression and diversion of the drainage offered the only hope of salvaging this patient. His condition was too unstable for immediate re-operation, and the right upper quadrant inflammation and infection made the surgery a formidable technical task.

A nasogastric tube was passed in the usual manner through which a # 160 guide wire was inserted. The nasogastric tube was then removed, leaving the guide wire in place in the stomach. A 100 cm. Medi-Tech catheter was passed over the guide which was then removed. With the manipulator in place the catheter was moved through the stoma into the afferent loop. This was accomplished with some difficulty because of the distention in the distal portion of the loop and the vigorous peristaltic activity in the proximal portion. Meglumine Diatrizoate‡ was injected when the catheter entered the descending duodenal limb. This demonstrated the duodenal leak and the drainage pathway. The guide was reinserted and a # 240 PE tube replaced the catheter. The bore of this tubing proved adequate for decompression and drainage, and the patient tolerated the small tube quite well.

Subsequent to this incident we have used this catheter for injection of barium and air into the hypotonic duodenum with excellent results. Patients seem to tolerate the small catheter without undue discomfort.

Summary

A case of post-gastrectomy afferent loop obstruction with duodenal leakage has been presented. The duodenum was decompressed and drainage diverted by means of a vascular catheter manipulated into the afferent loop. The fistula subsequently healed and the patient recovered. The potential value of an externally controllable, multidirectional catheter in the gastrointestinal tract has been discussed.

Acknowledgments

I am indebted to Benjamin Maldonado, Jr., M.D. and William K. Furst, M.D. for permitting my assistance in the care of this patient. I am grateful to Mrs. Donna L. Hunsicker for preparation of this material.

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‡ Renografin-76 (R), available from Squibb.

The Value of Long-term Continuous Oxygen Therapy As a Part of the Treatment of Chronic Respiratory Insufficiency*

ANDRE L. LAZ, M.D., WILLIAM KENT FURST, M.D.,
ROBERT M. NEDZBALA, M.D., AND CLAUDE GIBSON, A.A.I.T.

THE PULMONARY alveolar-capillary membrane complex must allow for the passive diffusion of oxygen from the alveoli into the bloodstream and a similar diffusion of carbon dioxide from the bloodstream to the alveoli. Without a continuous diffusion of these gases in the proper directions hypoxemia and/or hypercapnia will result. Numerous cardiopulmonary conditions will interfere with this orderly process. Disorders ranging from pulmonary edema and other alveolar-filling diseases to thickening or destruction of the alveolar walls and capillary membranes will result in pathologic alterations of the arterial blood gases. Oxygen therapy has been shown repeatedly to be a valuable therapeutic tool in the management of hypoxemic patients when proper attention is given to the possible development of hypercapnia. The largest category of such patients with chronic hypoxemia are those with chronic obstructive pulmonary disease. Presently, therapy which is designed to provide symptomatic relief to these patients is directed at the reversal of bronchospasm and the management of acute and chronic infection. More recently, Petty[1-4] has emphasized and re-awakened the concept of continuous oxygen therapy in the management of chronic hypoxemia. In addition, his programs have been geared to the total rehabilitation of these patients, including breathing training, physical reconditioning, and bronchial hygiene. It is only with the recent advent of portable liquid oxygen systems that such a total program has been available to patients with chronic obstructive pulmonary disease.

The administration of oxygen outside the hospital can be carried out in hypoxemic patients on either an intermittent or a continuous basis. A system which is adaptable to both methods is the Linde Portable Oxygen Walker with home reservoir.† The patient home-reservoir unit weighs approximately 8 lbs. and is carried by means of a shoulder strap. The oxygen is administered usually by nasal prongs. The walker is filled from the home reservoir by the patient himself in a matter of minutes. Oxygen flows may be adjusted from 1-7 liters per minute, depending upon the need.

The reservoir and the Linde Walker (figure 1) are rented from the local Linde representative. In addition, this representative maintains a route to refill the home reservoirs of the patients involved in the program. Because of the need for such a program in Metropolitan Washington and in the absence of an immediately available distributor, the Pulmonary Division of the Department of Internal Medicine of the Morris Cafritz Memorial Hospital in Washington, D. C. has instituted such a program by acting as the intermediary for an adjacent distributor. The equipment is the same as that previously described, each patient must make arrangements to have his home reservoir filled by bringing it to the hospital.

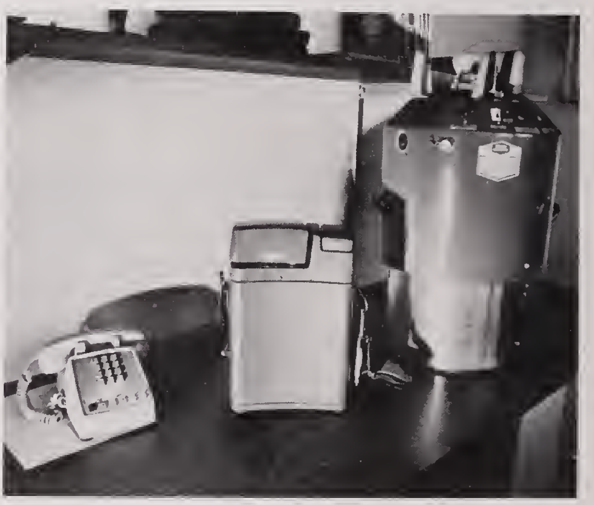

FIG. 1. Linde walker (left) and home reservoir.

After careful medical and pulmonary evaluation, including pulmonary function studies and arterial blood gases, patients can be included in such a program if they demonstrate chronic hypoxemia with

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* From the Pulmonary Division, Department of Internal Medicine of the Morris Cafritz Memorial Hospital, Washington, D. C.

† Linde Division, Union Carbide Corporation, New York, New York.

p_aO_2's below 50 (hemoglobin saturation 85 per cent). While in the hospital these patients are simultaneously instructed concerning the nature of their illness and the operation of the walker and home-reservoir unit, including its potential hazards.

All patients are encouraged to participate in physical re-conditioning and receive a program of bronchial hygiene. When applicable, breathing training is carried out. Since its inception the program has admitted 4 patients. Two patients use the system continuously, even during sleep; the others use it intermittently when planning exertional activities. The first patient (figure 2) placed in this program has had clinically recognizable chronic obstructive pulmonary disease since 1965. He has been steadily deteriorating since that time but has continued employment until late 1969. He did so despite extreme dyspnea, arterial p_aO_2 of 28 mmHg and an arterial p_aCO_2 of 55 mmHg. Despite vigorous therapy aimed at the relief of bronchospasm, immediate attention to respiratory infection, digitalization and diuretics for chronic cor pulmonale, weekly phlebotomies for polycythemia, and a home program of pulmonary toilet including IPPB treatments twice daily with bronchodilators and mucolytic agents, this patient has been hospitalized 3 times since January 1970 because of respiratory failure. On each occasion he has required tracheotomy and assisted ventilation for periods up to 2 weeks. Costs for hospitalization this year alone have exceeded $15,000. Despite all these therapeutic measures the patient remains severely hypoxemic (p_aO_2 25 mmHg, p_aCO_2 60 mmHg) and completely disabled. On 12 days of continuous oxygen therapy administered at 2 liters per minute prior to the institution of the portable oxygen system, this patient's p_aO_2 was stabilized at 50 mmHg and the p_aCO_2 at 60 mmHg. Substitution to the home reservoir and the walker while in the hospital resulted in comparable values, and the patient has tolerated the system well. He is ambulatory with the walker, no longer requires phlebotomies, and is anticipating resumption of activities of daily living.

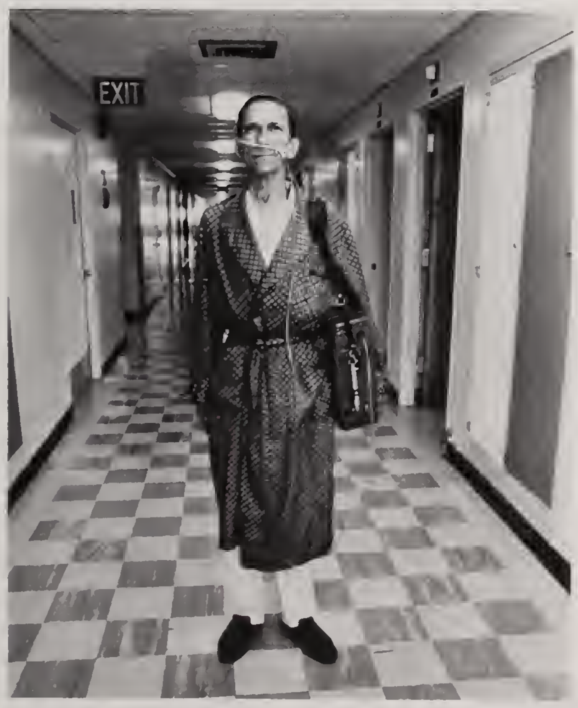

FIG. 2. Previously bedridden patient shown ambulating with the Linde walker.

Discussion

In general, the prognosis for patients with chronic obstructive pulmonary disease is poor.[5] It becomes especially so with the development of cor pulmonale.[6] Other authors have correlated the presence of hypoxia and hypercapnia with an early death.[5,7] In 1963 Chamberlain and Millard[8] reported on the successful treatment of polycythemia secondary to hypoxic lung disease by continuous oxygen administration. Earlier in 1956 Cotes[9] demonstrated the beneficial effects of oxygen in increasing the exercise tolerance of hypoxic patients. It remained for Petty and his co-workers[1-4] to assimilate this previous work into an overall program providing the chronically hypoxic patient with continuous and portable oxygen. Despite progressive deterioration of the ventilatory studies in these patients there were both a subjective and objective improvement in their clinical status. Maintenance of adequate hemoglobin oxygen saturation produces a decrease in the pulmonary hypertension and a resolution of the secondary polycythemia. Furthermore, it facilitates the management of cor pulmonale. In addition, there was a significant decrease in the frequency of respiratory failure and improvement in the mortality rate of Petty's group when compared to other groups reported in the literature. The past decade of technological advances in American medicine have focused attention on the treatment of end-organ failure. Renal dialysis programs, organ transplant procedures, permanent cardiac pacemakers, and other procedures are directed toward the amelioration of disabling and otherwise fatal diseases. As demonstrated by Petty, a similar program aimed at reducing disability and prolonging life is now available to patients with chronic respiratory insufficiency. The cost of such a program ($100-$200 per month, depending upon the amount of oxygen used) is small when compared to the cost of the repeated hospitalizations necessary for most of these patients because of acute respiratory failure superimposed upon their chronic respiratory insufficiency. In addition, many patients who were formerly completely disabled should now be able to care for themselves and in certain cases return to some form of gainful employment. In any case, the quality of life is significantly improved.

Summary

A feasible portable oxygen supply system utilizing liquid oxygen has been devleoped and is available in many major cities throughout the country. The nearest distributor in this area is in Baltimore, Maryland. It is not possible for him to supply Washington, D.C. In spite of the present inconvenience to the patient, the Pulmonary Division of the Morris Cafritz Memorial Hospital has established this service, using the hospital as the intermediary or "supply depot." We hope other interested groups in the Metropolitan area will do the same and thus encourage the establishment of a distributorship in this area. Only in this way will this new approach to respiratory rehabilitation become available to all who need it.

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Adenocarcinoma of the Vermiform Appendix Incidental to a Routine Cholecystectomy*

Report of a Case

BERNARD F. PEACOCK M.D., F.A.C.S., AND ROY H. BUNALES, M.D.

PRIMARY ADENOCARCINOMA of the vermiform appendix is a rather rare clinical entity. This is a clinicopathological report of what we believe is a primary localized adenocarcinoma of the vermiform appendix incidental to a routinely performed cholecystectomy at The Morris Cafritz Memorial Hospital, Washington, D. C.

Report of Case

T. L., MCMH No. 119410, was a 62-year-old caucasian woman who was admitted to The Morris Cafritz Memorial Hospital on January 19, 1970 with the chief complaint of "abdominal soreness". In July, 1969 she had a vague abdominal pain that radiated through the back associated with nausea but without vomiting. Since then she had had recurrent attacts of this type of pain, and the presence of cholelithiasis was determined by her physician.

On the day of admission the blood pressure was 120/80 mm. Hg and the pulse rate 78/min. with a regular rhythm. The patient was a well-developed, well-nourished but rather lean healthy lady who appeared the stated age of 62 years. The physical examination findings were essentially unremarkable.

The blood count, urea nitrogen, serum creatinine, fasting blood sugar, serum uric acid, serum calcium and phosphorus, SGOT, SGPT, LDH, serum alkaline phosphatase, serum bilirubin, and cholesterol were all within normal limits. The total proteins were within low normal limits. The urinalysis was normal. The chest X-ray film and electrocardiogram were normal.

On January 23, 1970 the patient had a routine cholecystectomy, and the presence of cholelithiasis was confirmed. The abdominal exploration revealed no gross abnormalities. Incidental appendectomy was carried out with ease since it was found technically feasible. On the 3rd postoperative day the histological diagnosis of the surgical specimen showed that the gallbladder had chronic cholecystitis with cholelithiasis and that the vermiform appendix had adenocarcinoma with invasion of the submucosa but not the muscularis mucosa, and acute appendicitis secondary to the obstructive process of the tumor.

It was elected to let the patient first recover from the cholecystectomy and then to do a right hemi-colectomy should her postoperative course remain satisfactory.

On February 5, 1970, 13 days post-cholecystectomy and appendectomy, she underwent an exploratory laparotomy and a standard right hemi-colectomy. The surgical specimen showed the appendiceal stump with inflammation and regional node hyperplasia. No tumor was seen in the tissues examined.

Except for a mild superficial wound infection which cleared up quickly the postoperative course was essentially uneventful and the patient was eventually discharged on February 21, 1970 to be followed by her private physician.

There have been sporadic case reports and studies of adenocarcinoma of the vermiform appendix, and attempts at defining the natural history, the factors important in influencing its course, and even determination of the effective means of therapy have been well documented. Watkins[4] in 1964 reviewed the literature on adenocarcinoma of the vermiform appendix.

The clinical diagnosis is most difficult since a majority of these patients are completely asymptomatic. After reviewing the reports of cases with lesions of histological types other than giant folliculat lymphomas, 21 were selected by Glick[2] in 1964 for analysis. These 21 appeared to be primary appendiceal neoplasms.

Of the 19 cases under study, 10 were males and 9 were females. The ages ranged from 4 to 51 years with an average of 23.7 years. The symptoms were nausea and vomiting in 3 and diarrhea in 1. Physical findings showed a mass in 7, findings compatible with appendicitis in 6, and signs of obstruction in 2. Appendicitis or a secondary complication such as abscess formation was probably the most frequent

(*Continued on page 678*)

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* From the Department of Surgery of the Morris Cafritz Memorial Hospital, Washington, D. C.

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The Food and Drug Administration has requested that we bring to your attention a recent promotional campaign for Garamycin Injectable (gentamicin sulfate) which featured a nationwide *in-vitro* hospital survey involving a comparison of sensitivity patterns of Garamycin Injectable and seven other antibiotics.

The FDA considers the advertising misleading in several respects such as:

The *in-vitro* chart contained in the ads, which compared Garamycin Injectable with seven other antibiotics, implied that Garamycin Injectable is clinically more effective than the seven other compared antibiotics. THE FACTS ARE (1) THAT DIRECT EXTRAPOLATION OF NONCLINICAL FINDINGS TO CLINICAL EFFECTIVENESS IS UNWARRANTED, AND (2) THAT THE ADVERTISED *IN-VITRO* COMPARISONS DO NOT CONSTITUTE A VALID BASIS FOR SUGGESTING THAT GARAMYCIN INJECTABLE HAS GREATER CLINICAL EFFECTIVENESS THAN THE COMPARED ANTIBIOTICS.

The *in-vitro* chart and information contained under the ad heading, "Indications" presented *in-vitro* data results in such a way as to imply that the drug is indicated for Gram-positive bacteria, such as *Staphylococcus aureus*. GARAMYCIN INJECTABLE IS NOT APPROVED FOR INFECTIONS DUE TO ANY GRAM-POSITIVE ORGANISMS.

We emphasize that Garamycin Injectable is approved for use only in infections due to susceptible strains of gram-negative bacteria, including Pseudomonas aeruginosa, and species of indole-positive and indole- negative Proteus, Escherichia coli, and Klebsiella-Aerobacter.

Schering

Injectable
Garamycin®
brand of
# gentamicin sulfate injection

Each cc. contains gentamicin sulfate equivalent to 40 mg. gentamicin

BRIEF SUMMARY

NDICATIONS GARAMYCIN Injectable is clinically effective in infections due to susceptible strains of gram-negative bacteria, including Pseudomonas aeruginosa, and species of indole-positive and indole-negative Proteus, Escherichia coli, and Klebsiella-Aerobacter. Bacteriologic studies hould be conducted to identify the causative organism and to determine ts sensitivity to gentamicin sulfate. Sensitivity discs of the drug are vailable for this purpose. If the susceptibility tests indicate that the ausative organism is resistant to gentamicin sulfate, other appropriate ntibiotic therapy should be instituted.

This drug should be limited to the treatment of serious infections aused by gram-negative bacteria, particularly Pseudomonas aeruginosa, roteus and other susceptible organisms, with due regard for relative ntibiotic toxicity. Therefore, the drug should be considered for use gainst gram-negative: 1. Bacteremia; 2. Infected surgical wounds; 3. evere soft tissue infections, including burns complicated by sepsis; 4. spiratory tract infections; and 5. Selected cases of urinary tract infecon.

ONTRAINDICATIONS GARAMYCIN Injectable is contraindicated in inviduals with a history of hypersensitivity or toxic reactions to gentacin.

ARNINGS **Patients receiving treatment with GARAMYCIN should be der close clinical observation because of the toxicity associated with e use of this drug. Ototoxicity, vestibular and auditory, can occur in tients, primarily those with pre-existing renal damage, treated with RAMYCIN Injectable, usually for longer periods or with higher doses an recommended.**

GARAMYCIN Injectable is potentially nephrotoxic, and this should be ot in mind when it is used in patients with pre-existing renal impairnt. Kidney function diminished by infection of the upper urinary tract y, however, improve during effective treatment with GARAMYCIN ectable.

Concurrent administration of potentially ototoxic drugs such as strepmycin and kanamycin or of potentially nephrotoxic drugs such as polyxin, colistin, and kanamycin with gentamicin sulfate has not been wn to afford any clinical advantages and, moreover may result in itive toxicity. Monitoring of vestibular, cochlear, and renal function provide guidance for therapy in such cases.

CAUTIONS In patients with impaired renal function in whom serious ction develops, serum concentrations of the drug may rise, with conuently increased risk of ototoxicity. In these patients or in those in whom recommended dosage or duration of therapy must be exceeded as a life-saving measure, routine studies of kidney function should be performed when possible. These may be supplemented by evaluation of the vestibular and auditory function and measurement of serum concentration of the drug when feasible. Serum concentration of gentamicin should be maintained below the range of 10-12 mcg./ml. to reduce risk of ototoxicity.

Ordinarily, treatment should not be given for more than 7 to 10 days or be repeated unless required for serious infection not responsive to other agents.

As with other antibiotics, treatment with GARAMYCIN Injectable may occasionally result in overgrowth of nonsensitive organisms. If superinfection occurs, appropriate therapy is indicated.

Safety for use in pregnancy or the potential for fetal ototoxicity or nephrotoxicity have not been established. Studies in pregnant animals have not revealed teratogenic or ototoxic effects in the fetus. GARAMYCIN Injectable should not be used in pregnant patients or in women of childbearing age unless its use is deemed advisable by the physician.

ADVERSE REACTIONS The overall incidence of ototoxicity considered related to treatment with GARAMYCIN Injectable was 2.8 per cent (16 of 565 patients). Contributory factors (two or more factors were relevant to most patients) were as follows: 10 had azotemia, 10 received a total of 1 gram or more of the drug, 7 had recently received other potentially ototoxic antibiotics (streptomycin or kanamycin), and 5 were over 60 years of age. Six also had decreased high-tone hearing acuity, which returned to or toward normal in the 4 patients retested.

Analysis of BUN data indicated that 4 (2%) of 172 patients showed increases in BUN that were probably related to treatment with GARAMYCIN Injectable. Of 20 increases probably or possibly related to treatment, 7 were reversible, 9 occurred in terminal patients, and 4 had no follow-up.

Other adverse reactions associated with treatment were one instance each of urticaria, decreased hematocrit, and reversible depression of granulocytes with normal bone marrow. Other rarely reported and possibly treatment-related adverse reactions were anemia, increased reticulocyte count, rash, purpura, drug fever, hypotension, convulsions, twitching, salivation, nausea, vomiting, increased transaminase activity (SGOT or SGPT), increased serum bilirubin, decreased serum calcium, and joint pain.

PACKAGING GARAMYCIN Injectable, 40 mg./cc., 2-cc. multiple-dose vials, for intramuscular administration.

SCHERING CORPORATION, UNION, NEW JERSEY 07083

SCH 2620

President's Page

EVOLUTION OF A HOSPITAL

What is a hospital? Bricks, mortar, glass, steel–beds, sick people, doctors–complicated instruments, CCU, ICU, sicker people, more doctors, nurses and aides–sirens, Emergency ward–no lull.

"People" take "the" hospital for granted–as if it's always been there–not recognizing the hours, days, years, money, anguish necessary to put it there; or to keep it in operation.

How does it start? Few people have had the good fortune and privilege of being part of the construction of a hospital from the initial thought to its complete operation.

The idea for Cafritz arose because of the immense need for such a health facility in the area, initiated by individuals concerned for the community, not knowledgeable of the vastness of the thought, but not frightened by the prospect. August 1952–Eight people sitting in a small non-air-conditioned room in an old YMCA building in Anacostia.

Approximately 15 years of struggle–no money; fortunately, dedicated individuals and sympathetic friends–the Lions Club and the Kiwanis. Early names like John Fletcher, Joseph Brewster, Leon Cohen, then Ray McDonough, Ernest Read, Sr., Ledru Koontz, "Pete" Elderkin, Sol Greenberg, many other names, some forgotton–but more to come–like Holland, Warner, Quarles, etc. House-to-house campaigning–ask Lou Brott–fund drives–mostly failures. Thank God for sympathetic law makers–Hon. Catherine Kelly, N. Y., to Hon. John McCormick, Mass. to federal assistance needed to support community effort. The starting of a new Medical Staff–Gartland, Peacock, Talbot, Hecker, and others–finally, opening date, 1966!

Well, that's all past history–nostalgic and dusty. Now a flourishing 400 bed institution serving SE Washington and a portion of Price George's County, Md. Its facilities are comparable to any hospital of its kind and size. We of the medical staff are willing to show you why we think so.

In this issue of the ANNALS the staff at Cafritz Memorial Hospital prepared papers developed through study of the many interesting problems presented at the hospital. Considering the vintage of the hospital this is an important indication of the dedication of the medical staff to patient care, to advancement of medical knowledge to improve this care, and to improve diagnostic ability. They deserve our thanks and congratulations.

Frank S. Pellegrini

Campbell's Soups... wide variety...for limited appetites

Many people lose interest in food as they grow older. Some of them are fussy eaters—with only a few favorite foods. Others become indifferent to foods—because planning and preparing meals becomes a chore. Here Campbell's Soups can help—for these four very good reasons:

Appeal With a variety of tastes, textures, aromas, and colors, Campbell's Soups can add interest and appetite appeal. And they're easy to eat—ingredients are tender, bite-size. Even patients on special diets will find soups they can enjoy among the more than 50 different varieties available.

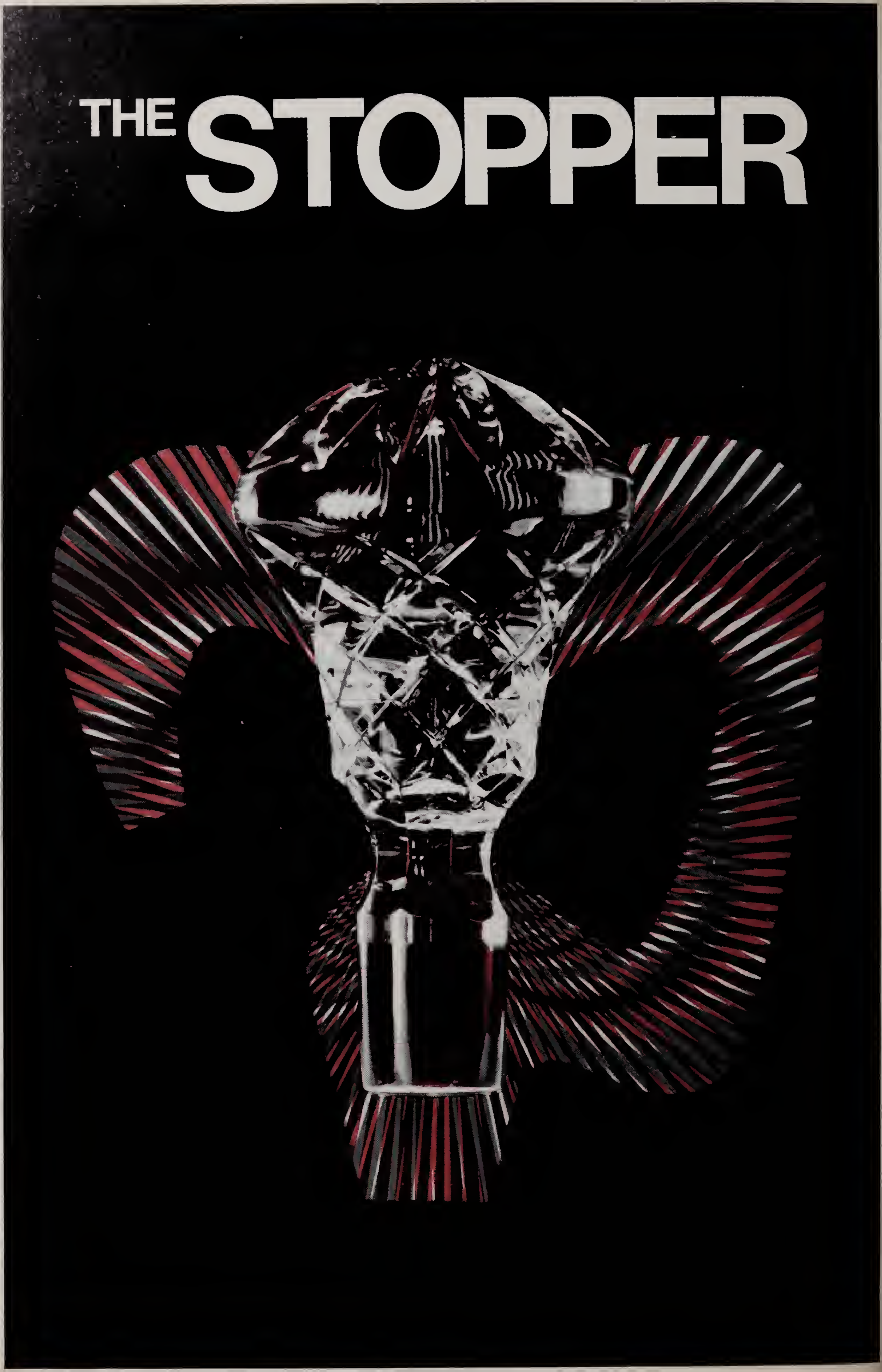
Nourishment Campbell's Soups contain selected meats and sea foods, best garden vegetables—carefully processed to help retain their natural flavors and nutritive values.

Convenience Within 4 minutes a bowl of delicious soup is heated and ready to eat.

Economy Campbell's Soups are inexpensive—an important consideration to those whose budgets are limited.

Recommend Campbell's Soups . . . and, of course, enjoy them yourself. Remember, *there's a soup for almost every patient and diet . . . and for every meal.*

Campbell's
SOUP


THE STOPPER

LOMOTIL®

tablets/liquid

Each tablet and each 5 cc. of liquid contain:
diphenoxylate hydrochloride ....2.5 mg.
(Warning: May be habit forming)
atropine sulfate ....0.025 mg.

first aid in diarrhea of acute gastroenteritis

PROMPT ANTIDIARRHEAL ACTION

Roentgenographic studies demonstrate that the motility-lowering activity of Lomotil is concentrated in the first three hours and continues for at least six hours.

Clinical investigators have found ample confirmation of these determinations. Lomotil has reduced diarrheal urgency in many patients within one hour.

OPTIMAL ANTIDIARRHEAL CONTROL

Numerous investigators have remarked on the high degree of effectiveness of Lomotil in a variety of diarrheal disorders. Lomotil has given good to excellent relief of symptoms in many patients who had failed to respond to other measures.

UNSURPASSED ANTIDIARRHEAL ACCEPTANCE

Patients prefer Lomotil for its convenience, its prompt control of diarrhea and its relief of cramping and urgency. Physicians specify Lomotil for its dependable action and its relative freedom from side effects when taken as directed.

Warnings: Lomotil should be used with caution in patients taking barbiturates and, if not contraindicated, in patients with cirrhosis, advanced liver disease or impaired liver function.

Precautions: Lomotil is a federally exempt narcotic with theoretically possible addictive potential at high dosage; this is not ordinarily a clinical problem. Use Lomotil with considerable caution in patients receiving addicting drugs. Recommended dosages should not be exceeded, and medication should be kept out of reach of children. Signs of accidental overdosage may include severe respiratory depression, flushing, lethargy or coma, hypotonic reflexes, nystagmus, pinpoint pupils, tachycardia; continuous observation is necessary. The subtherapeutic amount of atropine sulfate is added to discourage deliberate overdosage.

Adverse Reactions: Side effects reported with Lomotil therapy include nausea, sedation, dizziness, vomiting, pruritus, restlessness, abdominal discomfort, headache, angioneurotic edema, giant urticaria, lethargy, anorexia, numbness of the extremities, atropine effects, swelling of the gums, euphoria, depression and malaise.

Overdosage: The medication should be kept out of reach of children since accidental overdosage may cause severe, even fatal, respiratory depression.

Dosage: The recommended initial daily dosages, given in divided doses until diarrhea is controlled, are as follows:

Children:

3-6 mo. .. ½ tsp.* t.i.d. (3 mg.)
6-12 mo. .. ½ tsp. q.i.d. (4 mg.)
1-2 yr. ... ½ tsp. 5 times daily (5 mg.)
2-5 yr. ... 1 tsp. t.i.d. (6 mg.)
5-8 yr. ... 1 tsp. q.i.d. (8 mg.)
8-12 yr. .. 1 tsp. 5 times daily (10 mg.)
Adults: ... 2 tsp. 5 times daily (20 mg.)
or 2 tablets q.i.d.

*Based on 4 cc. per teaspoonful.

Use of Lomotil is not recommended in infants less than 3 months of age.

Maintenance dosage may be as low as one fourth the initial daily dosage.

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G. D. SEARLE & CO. • P.O. Box 5110, Chicago, Illinois 60680 • Research in the Service of Medicine

in cardiac edema

Trademark

Dyazide®

Each capsule contains 50 mg. of Dyrenium® (brand of triamterene) and 25 mg. of hydrochlorothiazide.

gets the water out

spares the potassium

Before prescribing, see complete prescribing information in SK&F literature or *PDR.*

Indications: Edema associated with congestive heart failure, cirrhosis of the liver, the nephrotic syndrome, late pregnancy; also steroid-induced and idiopathic edema, and edema resistant to other diuretic therapy. 'Dyazide' is also indicated in the treatment of mild to moderate hypertension.

Contraindications: Pre-existing elevated serum potassium. Hypersensitivity to either component. Continued use in progressive renal or hepatic dysfunction or developing hyperkalemia.

Warnings: **Do not use dietary potassium supplements or potassium salts unless hypokalemia develops or dietary potassium intake is markedly impaired.** Enteric-coated potassium salts may cause small bowel stenosis with or without ulceration. Hyperkalemia (>5.4 mEq/L) has been reported in 4% of patients under 60 years, in 12% of patients over 60 years, and in less than 8% of patients overall. Rarely, cases have been associated with cardiac irregularities. Accordingly, **check serum potassium during therapy, particularly in patients with suspected or confirmed renal insufficiency (e.g., certain elderly or diabetics). If hyperkalemia develops, substitute a thiazide alone. If spironolactone is used concomitantly with 'Dyazide', check serum potassium frequently**—they can both cause potassium retention and sometimes hyperkalemia. Two deaths have been reported in patients on such combined therapy (in one, recommended dosage was exceeded; in the other, serum electrolytes were not properly monitored). Observe regularly for possible blood dyscrasias, liver damage or other idiosyncratic reactions. Blood dyscrasias have been reported in patients receiving Dyrenium (triamterene, SK&F). Rarely, leukopenia, thrombocytopenia, agranulocytosis, and aplastic anemia have been reported with the thiazides. Watch for signs of impending coma in acutely ill cirrhotics. Thiazides are reported to cross the placental barrier and appear in breast milk. This may result in fetal or neonatal hyperbilirubinemia, thrombocytopenia, altered carbohydrate metabolism and possibly other adverse reactions that have occurred in the adult. When used during pregnancy or in women who might bear children, weigh potential benefits against possible hazards to fetus.

Precautions: Do periodic serum electrolyte and BUN determinations. Do periodic hematologic studies in cirrhotics with splenomegaly. Antihypertensive effects may be enhanced in postsympathectomy patients. The following may occur: hyperuricemia and gout, reversible nitrogen retention, decreasing alkali reserve with possible metabolic acidosis, hyperglycemia and glycosuria (diabetic insulin requirements may be altered), digitalis intoxication (in hypokalemia). Use cautiously in surgical patients. Concomitant use with antihypertensive agents may result in an additive hypotensive effect.

Adverse Reactions: Muscle cramps, weakness, dizziness, headache, dry mouth; anaphylaxis; rash, urticaria, photosensitivity, purpura, other dermatological conditions; nausea and vomiting (may indicate electrolyte imbalance), diarrhea, constipation, other gastrointestinal disturbances. Rarely, necrotizing vasculitis, paresthesias, icterus, pancreatitis, and xanthopsia have occurred with thiazides alone.

Supplied: Bottles of 100 capsules.

SK
&F

Smith Kline & French Laboratories

History of the Medical Society of the District of Columbia

CHAPTER VI

Prepaid Medical Care

THAT ORGANIZED MEDICINE'S RELUCTANCE to approve prepaid medical care was not of recent origin was disclosed in Dr. S. C. Busey's "Personal Reminiscences." He relates that the acceptance of a yearly fixed sum for medical services, undoubtedly payable in advance, had been in vogue in Georgetown about 1850. Physicians in the community applying for membership in the Medical Association of the District of Columbia were accepted only on the basis that they would abandon this practice.

There was a suspicion that one physician in particular accepted only what was offered him in the way of fees, often neglecting to exact any fees and failing to send bills for his services. He became very much upset at being required to defend himself against these charges before a committee of the Medical Association.

Dr. Busey, who was present at the "trial," writes:

"He (the defendant) arose suddenly and unexpectedly, and with marked emotion, in a trembling voice, the tears trickling down his cheeks, and banging his hat between his hands, said the derelictions as charged were true, excused himself with the statement that he did not need the money and would have retired from the practice of medicine if he had known anything else in which to engage, but that he was absolutely afraid of idleness and promised that he would in the future make the best effort he could to comply with the regulations of the Association."

It was a far cry from the early days, but, as stated in a previous chapter, the American Medical Association in the 1930's was still opposed to or had given only qualified approval to prepaid hospitalization and medical care. However, a sizable and growing minority disagreed with the Association's position. There were also some prominent citizens who favored medical plans which would relieve the middle- and low-income groups of the burdensome costs of illness.

Industries had already made progress in this field. Experiments in providing prepaid hospitalization had been initiated in Dallas, Texas, and prepaid medical care was being provided by medical societies on a local basis in the states of Oregon and Washington. An abortive attempt to establish a prepayment medical service plan by the Medical Society of Milwaukee County had been made in 1932. Finally, the California Medical Association sponsored the first state-wide voluntary health insurance plan in 1937, closely followed in the same year by the Michigan State Medical Society. Several other state medical societies then followed with either indemnity or service plans.

Mutual Health Service

The Medical Society's Committee on Medical Economics had been working on a medical prepayment service plan to be known as Mutual Health Service for several months when the details were announced in the January, 1939 issue of the *Medical Annals.* The Committee stated frankly that the plan was of an experimental nature and warned that unless members of the Medical Society were prepared to give their wholehearted support it should not be undertaken.

Reported was the assistance given the Committee in working out the plan by Dr. R. G. Leland, Director of the AMA's Bureau of Medical Economics, and by Mr. Charles S. Baker, the Society's legal counsel. As it developed, Dr. Leland's superiors and colleagues at the AMA headquarters in Chicago were not pleased with the encouragement and help he had given the Medical Society's Committee.

The objectives of Mutual Health Service, as stated in the *Medical Annals,* were threefold:

"To provide good medical care to subscribers to the program".

"To guarantee to subscribers free choice of physicians providing the physician chosen has agreed to participate in the program".

"To cooperate with Group Hospitalization, Inc. to the end that the subscriber be assured medical and hospital care on the monthly payment basis."

Those eligible to subscribe were persons under 60 years of age with incomes as follows:

$2,000 for single persons
$2,500 for husband and wife (combined income)
$200 for each dependent.

All of the above would be accepted only in groups of 10.

Medical services included under the plan were surgical, obstetrical, and medical care including office visits, home and hospital calls, X-ray and laboratory services, services of an anesthetist, and authorized consultant service.

The cost of services which the subscriber received under this program in any year, it was stated, "shall not exceed $250 per single person, $350 for a husband and wife, and $450 for a family." There was also a $1.00 registration fee required and a one-month probationary period before services for a medical condition would be available. The first services rendered each year in the amount of $5.00 would be paid by the subscriber.

A schedule of physicians' fees was yet to be developed.

Dr. Arch L. Riddick was elected President, Dr. Thomas E. Mattingly, Vice President, and Theodore Wiprud, Secretary.

The Mutual Health Service was to be under the direction of a Board of Trustees, of which the following were members: Dr. Henry R. Schreiber, Chairman; Drs. Mattingly, Riddick, Harry Dowling, A. Clagett Gray, William P. Herbst, Kate B. Karpeles, Luther H. Reichelderfer, and Mr. Wiprud, Secretary *ex officio.* Mr. Baker and Mr. Warren Magee were the legal counsel.

Chosen administrator was Mr. Hugh H. Buhrman, who had been Field Director for the American Red Cross and its Director of Roll Call and Public Relations.

To insure support of employers in Washington a lay advisory committee had been appointed. The Chairman of this committee was Mr. Robert V. Fleming, President of the Riggs National Bank. On the roster of this committee were Washington's most prominent businessmen.

Most encouraging was the response of members of the Medical Society. By March 1939, 600 had indicated they would participate. Among those who did not sign up were members not engaged in private practice, or for some reason were not favorable to the plan. However, they constituted a minority of Active Members.

It was in the early summer of 1939 that Dr. Riddick and Mr. Wiprud journeyed to Toronto, Canada, to see a successful voluntary health insurance plan in operation—the Ontario Medical Service. They found it to be a modest plan which, to all appearances, had succeeded. However, conditions in Toronto were far different from those in Washington. Nevertheless, a few things were learned that would, it was hoped, smooth the way for Mutual Health Service.

But there were a number of obstacles which had to be overcome. Among them was the refusal of Mr. Joseph Himes, then President of Group Hospitalization, Inc. to have anything to do with Mutual Health Service. He said it was not a workable plan because of the restrictions of its income levels. Time proved him right, but his rigidity at first angered the Board of Trustees of Mutual Health Service. Another was the complete disinterest of the public in Mutual Health Service. Much of it stemmed from the controversy between the Medical Society and Group Health Association, Inc. which will be described later in this chapter.

Heads of Government departments ignored communications from the Administrator of Mutual Health Service or made their opposition to the plan known.

Private employers on the lay advisory committee showed no enthusiasm for the plan nor did they endeavor to interest their employees.

The most damaging feature of the plan was its income levels. Although they represented the average income (the income levels were later raised) of the District's citizens in 1939, employers were not interested in a plan from which they personally could not derive any benefit. They would have accepted Mutual Health Service if they had been permitted to subscribe and to benefit to some extent by participation. The Administrator and the Secretary of the Board of Trustees were told as much at a bank with which the Medical Society did business. The official with whom they talked said frankly that he would not be interested in any program from which he could not benefit.

The Board of Trustees, which had held so many meetings and devoted so many hours to make Mutual Health service successful, finally had to admit defeat. It was a bitter pill, and it was not surprising that the Board concluded that further expenditure of time and money was not justified. Offices for Mutual Health Service had been opened for business for several months and the Administrator had not secured enough subscribers to warrant putting the plan in operation. Not all members of the Board of Trustees were happy at this turn of events.

Mutual Health Service suspended operation on April 3, 1940. A detailed report of the experience of the Service appears in the *Medical Annals of the District of Columbia* for April 1940.

An editorial appearing in this issue states: "Despite the assurance that all the resources at the Society's command would be made available to persons subscribing to the Service, results of several months' effort have shown that even though there be a need, there is no widespread demand for prepaid medical service."

In retrospect it seems fortunate that Mutual Health Service failed. Financially it now appears unsound and might have proved a very expensive experiment for the Medical Society.

Group Health Association, Inc.

During the year 1937 a coöperative medical plan had been organized in the District of Columbia known as Group Health Association, Inc., the purpose of which was to furnish medical service to its members on a pre-payment basis. This service would be rendered at a clinic by a salaried staff of doctors. When the medical profession of the District learned that the Government's Home Owners Loan Corportaion had advanced $40,000 for the establishment of GHA they became much concerned. As the leaders of the Medical Society at that time saw it, this would be a long step toward socialized medicine. Unless action were taken to stop Group Health Association's operation, private practice in the District was threatened.

Throughout 1937 and the early part of 1938 the Society was in a ferment. Drastic actions were taken to prevent members of the Society from joining GHA's staff. Most prominent was Dr. Mario Scandiffio, who became GHA's Medical Director and was expelled from membership in the Medical Society. A "white list" of Washington hospitals who would not grant privileges to GHA physicians was circulated by the Medical Society among its members.

Officers and members of GHA (all government employees) were enraged. As a result the controversy became heated to a point of hysteria. Dr. Conklin, Secretary of the Medical Society, faithfully recorded in detail what was angrily said and proposed at Society meetings. Neither he nor anyone else connected with the Society could have anticipated that what was being done and what was said on the record would ever be used against them in a court of law.

Newspapers were having a field day. As usual they thrived on controversy, and what was published often did not reflect credit on the medical profession. Finally, it was hinted in the press that the Department of Justice was taking an interest in the situation. Then came the announcement by Thurmond Arnold, Assistant Attorney General, that a Grand Jury would be empaneled to determine whether the Medical Society and the AMA were guilty of conspiracy and had violated the Sherman Antitrust Act.

The Medical Society membership was stunned. They could not believe that this could happen to their organization. After all, the Medical Society membership had been allowed to go its way without hindrance for most of the years of its existence. Many saw it as a maneuver by the government to bring organized medicine to heel. Regardless of their thoughts, stormy days were immediately ahead for the Society.

Medical Service of the District of Columbia

It became increasingly apparent in the Spring of 1944 that despite the failure of Mutual Health Service another pre-payment plan would have to be undertaken by the Medical Society, which, it was hoped, would prove successful. Other state medical societies were operating limited service and indemnity plans with fair success. The most successful were the so-called Surgical Service Plans.

Dr. J. Lloyd Collins, an unusually able young physician, became Chairman of the Committee on Medical Economics, which was later renamed the Committee on Medical Care. Due to ill health, which resulted in his early death, he resigned. Dr. Frank D. Costenbader, Vice Chairman, took over as Chairman with great reluctance. As following events disclosed, he was a most fortunate choice. Without his courageous and patient leadership the result might have been entirely different.

Michigan Medical Service, one of the first State plans, was publicized as the most successful in the country. Dr. Costenbader, Dr. Herbert P. Ramsey, and the Executive Director of the Medical Society went to Detroit to have a first-hand look. They discovered that the Service had had a turbulent history but was now in the "black." Mr. Jay C. Ketchaum was its capable Director. He recounted the financial recovery of the plan under the most adverse circumstances. The visit was very rewarding because it pointed out some of the pitfalls and obstacles to be avoided.

Later the Executive Director paid a visit to the Hospital Savings Association at Chapel Hill, North Carolina, where he gathered more information for the Committee.

Dr. Norman Scott, Medical Director of the Medical-Surgical Plan of New Jersey, came to Washington at the invitation of the committee and gave them some enlightening information.

At this point two subcommittees of the Committee were appointed with the approval of the Medical Society's Executive Board, one on Pre-paid Medicine and the other on Diagnostic Clinics. Dr. Harry F. Dowling was appointed Chairman of the latter. He and the Executive Director of the Medical Society worked out plans for a Diagnostic Clinic to be sponsored by the Medical Society. When lack of funds made this impossible they made an effort to interest George Washington and Georgetown Universities' Hospitals. In the course of this effort they visited the Diagnostic Clinic at the Johns Hopkins Hospital in Baltimore. They also enlisted the aid of the U.S. Public Health Service, which lent the services of Dr. V. M. Hoge. Nothing came of the subcommittee's efforts, largely due to a lack of funds.

As this effort phased out, the Committee as a whole gave its attention to the establishment of a medical (pre-payment) plan. In a preliminary report in December, 1944 Dr. Costenbader indicated that Group Hospitalization, Inc. was taking considerable interest in the development of a Medical Society plan. And here it should be stated that Mr. E. J. Henryson, Director of GHI, gave invaluable assistance to the Committee. He attended many meetings of the Committee at the request of the Chairman, from time to time giving such advice as he thought would be helpful.

Progress was painfully slow. One physician on the Committee, representing the U.S. Public Health Service, had been ordered elsewhere and therefore resigned. He was much discouraged and insisted that the Medical Society would never sponsor a plan because there were too many divergent views on what kind it should be. The year 1945 passed with numerous long and tiresome meetings. Often they were argumentative. In January 1946, however, the Committee issued a pamphlet describing the pre-payment plan which it proposed. It was sent to all members of the Medical Society. The plan would be named the Medical Service of the District of Columbia. Enclosed with the pamphlet was a form on which a Medical Society member could indicate his wish to become a Participating Physician.

In the meantime it had been ascertained that GHI would be willing to administer the plan decided upon. Negotiations were begun with this end in view. There were no protests from Mr. Joseph Himes, President of GHI, as there had been when Mutual Health Service was organized.

Highlights of the plan which developed follow:

Medical Service of the District of Columbia would begin as a Surgical Service Plan incorporated under the laws of the District of Columbia.

It would provide subscribers with surgical and obstetrical services, supplemented by X-ray, laboratory, and anesthesia services in the hospital.

Expansion (to include medical care) would be undertaken, members were assured, as soon as the financial soundness of the plan had been determined.

Subscribers would have free choice of Participating Physicians, and the latter would have the choice of subscribers they wished to serve.

The Plan would be under the direction of a Board of Trustees, composed of 1 representative of the Public Health Service, 2 of the Washington Metropolitan Health Conference, 1 of the D.C. Health Department, and 7 from the Medical Society.

The Board would contract with GHI to administer Medical Service.

Limit of benefits: $300 per annum for a single subscriber, $400 for a husband and wife and $500 for a family.

Waiting period before benefits became available would be 10 months.

Subscribers would be accepted only in employed groups and must be 50 per cent of eligible employees.

Dues: 75 cents per month for single persons, $1.50 for subscriber and spouse, and $1.75 for subscriber, spouse and dependents.

Physicians' fees as listed in the pamphlet would be in full payment unless the subscriber demanded more than essential hospital accommodations.

When Medical Service was finally placed in operation some of these provisions were found unacceptable or unworkable. For example, the no-income level was unacceptable to Participating Physicians. Income levels were finally established, below which a fee would be accepted as full payment. If the income was above the stipulated figure the Participating Physician could charge his regular fee.

The Medical Society finally gave its approval of Medical Service at a special business session on September 18, 1946. The previous meeting, at which the Plan had been considered, had been a stormy one.

Incorporators were Drs. Victor R. Alfaro, Joseph B. Bogan, Arthur C. Christie, William Earl Clark, Milton C. Cobey, Frank D. Costenbader, Sidney C. Cousins, Henry L. Darner, Harry F. Dowling, William T. Gill, Jr., William P. Herbst, Jr., Raymond T. Holden, Oscar B. Hunter, Sr., A. Magruder MacDonald, Paul S. Putzki, W. Warren Sager, Fred R. Sanderson, Maurice A. Selinger, Joseph P. Shearer, and Donald

H. Stubbs. Immediately following incorporation the seven members of the Board of Trustees who were to represent the Society were chosen. They were Drs. Costenbader, Cousins, Dowling, Herbst, Holden, Sager and Selinger.

The Board of Trustees elected the following officers: Dr. Costenbader, President; Dr. Sager, First Vice President; Dr. G. Halsey Hunt (P.H.S.), Second Vice President; Mr. Theodore Wiprud, Secretary; Mr. Howard Strong (U.S. Chamber of Commerce), Treasurer.

As a meeting of the Board of Trustees of Group Hospitalization, Inc., held on January 7, 1947, Mr. Himes announced that his organization would administer Medical Service when terms had been agreed upon. An agreement was finally signed on June 24.

In his President's Message, Dr. Holden, then President of the Medical Society, said: "Let there be no doubt in people's minds that we are enthusiastically in favor of the plan which we are confident will do much to meet the medical needs of the citizens of Washington."

It was only fitting that Dr. Costenbader should be the first President of Medical Service of D.C. He had "fought the good fight" and demonstrated unusual courage and patience. Dr. Sager, the First Vice President, died shortly after Medical Service began operation. His place was taken by the Second Vice President, Dr. Hunt. Dr Hunt served as First Vice President for a number of years and was a very valuable member of the Board.

The first layman elected to the Board of Trustees and in 1962 still rendering invaluable service on that body was Mr. Philip M. Talbot, then Vice President and General Manager of Woodward and Lothrop.

Medical Service of D.C. weathered many storms, financial and otherwise, in the years that followed. On March 1, 1949 Dr. Costenbader said prophetically, "Medical Service is still in its infancy," and so it was.

For a time Mr. F. P. Rawlings, Director of Group Hospitalization, Inc., was also Manager of Medical Service, which kept its separate identity. Mr. George D. McGovern, employed by GHI as its Claims Manager, finally succeeded Mr. Rawlings. He proved a happy choice, demonstrating unusual administrative ability, shown by the fact that he was in time made Executive Vice President.

Following his retirement as Executive Director and Secretary of the Medical Society in 1962, Mr. Wiprud was chosen by Mr. McGovern as his Special Assistant.

Medical Service has been exceptionally fortunate in the selection of its Presidents. Here they are and the periods they served:

Dr. Frank D. Costenbader	1946-51
Dr. Charles Stanley White	1951-52
Dr. Donald H. Stubbs	1952-59
Dr. James E. Dusbabek	1959-61
Dr. Henry L. Darner	1961-

Of the above, Dr. Stubbs served for the longest period. Because he was a natural leader and unusually articulate, he became prominent in the National Blue Shield movement.

At the annual meeting in 1962 Dr. Darner, then President, could announce with justifiable pride that the enrollment in Medical Service, which in 1948 was 112,000, at the close of 1961 was 850,000.

in cardiac edema

Dyazide®

Trademark

Each capsule contains 50 mg. of Dyrenium® (brand of triamterene) and 25 mg. of hydrochlorothiazide.

gets the water out

spares the potassium

Before prescribing, see complete prescribing information in SK&F literature or *PDR*.

Indications: Edema associated with congestive heart failure, cirrhosis of the liver, the nephrotic syndrome, late pregnancy; also steroid-induced and idiopathic edema, and edema resistant to other diuretic therapy. 'Dyazide' is also indicated in the treatment of mild to moderate hypertension.

Contraindications: Pre-existing elevated serum potassium. Hypersensitivity to either component. Continued use in progressive renal or hepatic dysfunction or developing hyperkalemia.

Warnings: **Do not use dietary potassium supplements or potassium salts unless hypokalemia develops or dietary potassium intake is markedly impaired.** Enteric-coated potassium salts may cause small bowel stenosis with or without ulceration. Hyperkalemia (>5.4 mEq/L) has been reported in 4% of patients under 60 years, in 12% of patients over 60 years, and in less than 8% of patients overall. Rarely, cases have been associated with cardiac irregularities. Accordingly, **check serum potassium during therapy, particularly in patients with suspected or confirmed renal insufficiency (e.g., certain elderly or diabetics). If hyperkalemia develops, substitute a thiazide alone. If spironolactone is used concomitantly with 'Dyazide', check serum potassium frequently**—they can both cause potassium retention and sometimes hyperkalemia. Two deaths have been reported in patients on such combined therapy (in one, recommended dosage was exceeded; in the other, serum electrolytes were not properly monitored). Observe regularly for possible blood dyscrasias, liver damage or other idiosyncratic reactions. Blood dyscrasias have been reported in patients receiving Dyrenium (triamterene, SK&F). Rarely, leukopenia, thrombocytopenia, agranulocytosis, and aplastic anemia have been reported with the thiazides. Watch for signs of impending coma in acutely ill cirrhotics. Thiazides are reported to cross the placental barrier and appear in breast milk. This may result in fetal or neonatal hyperbilirubinemia, thrombocytopenia, altered carbohydrate metabolism and possibly other adverse reactions that have occurred in the adult. When used during pregnancy or in women who might bear children, weigh potential benefits against possible hazards to fetus.

Precautions: Do periodic serum electrolyte and BUN determinations. Do periodic hematologic studies in cirrhotics with splenomegaly. Antihypertensive effects may be enhanced in post-sympathectomy patients. The following may occur: hyperuricemia and gout, reversible nitrogen retention, decreasing alkali reserve with possible metabolic acidosis, hyperglycemia and glycosuria (diabetic insulin requirements may be altered), digitalis intoxication (in hypokalemia). Use cautiously in surgical patients. Concomitant use with antihypertensive agents may result in an additive hypotensive effect.

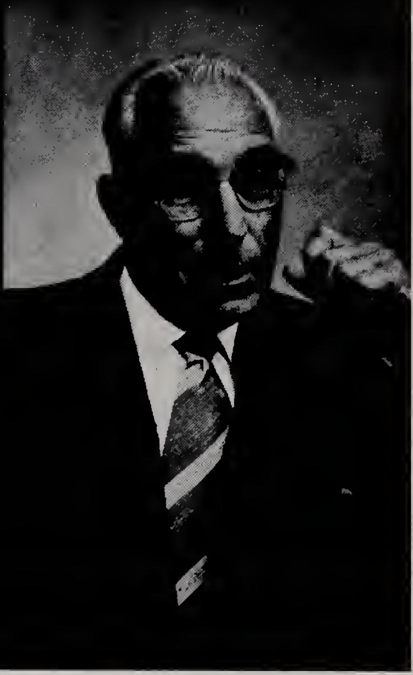
Adverse Reactions: Muscle cramps, weakness, dizziness, headache, dry mouth; anaphylaxis; rash, urticaria, photosensitivity, purpura, other dermatological conditions; nausea and vomiting (may indicate electrolyte imbalance), diarrhea, constipation, other gastrointestinal disturbances. Rarely, necrotizing vasculitis, paresthesias, icterus, pancreatitis, and xanthopsia have occurred with thiazides alone.

Supplied: Bottles of 100 capsules.

SK&F

Smith Kline & French Laboratories

"Drug research gives me the tools that save lives."



A family doctor looks at new developments in the pharmaceutical industry. And he speculates on the future.

When I look back at some of my old records, I'm constantly reminded of the changes that have come about in medicine just during the past twenty-five years. Some of the diseases I treated and prayed over in the '40's are found mostly in medical history books now.

Thanks to drug research and development, we've made substantial gains in the control of cardiovascular disease, diabetes, malaria, mental illness, strep and staph infections, meningitis and a long list of ailments. It seems like only yesterday when a diagnosis of pneumonia was almost the kiss of death. Now, with modern medical techniques and drug therapy, we can offer some real help.

My records on polio, influenza and measles show an unbelievable trend for the better. New vaccines have reduced the toll of these age-old threats dramatically. And I see patients in pain from crippling arthritis helped with new medicinals unknown just a few years ago.

I hear questions about the three billion or so dollars spent by the drug industry in research during the past ten years . . . working on new and better drug products. It does seem like quite a bit of money to spend, and I realize some of it goes into dead ends. That's the problem with research, any research . . . you often don't know where you're going until you get there. I want all the tools I can get to help my patients. I want more drugs and more effective drugs. If they mean less pain, longer lives and more productive careers for those I treat . . . well, that's what really counts.

Another point of view . . . Pharmaceutical Manufacturers Association, 1155 Fifteenth Street, N.W., Washington, D.C. 20005.

This advertisement has been reaching consumers thru THE ATLANTIC, FAMILY HEALTH, HARPER'S MAGAZINE, NEWSWEEK, SATURDAY REVIEW, TIME and

Roche
announces

Efudex®
(fluorouracil)
cream/solution

for the treatment of solar/actinic keratoses... a topical alternative to conventional therapy

Fluorouracil—the Roche contribution

In 1962, Roche Laboratories introduced Fluorouracil Roche® (5-fluorouracil). Early clinical work with this drug suggested that it possessed a selective cytotoxic activity when applied topically to certain kinds of lesions. Based on this work and years of clinical trials, a standardized form of topical fluorouracil can now be recommended for treatment of multiple solar or actinic keratoses.

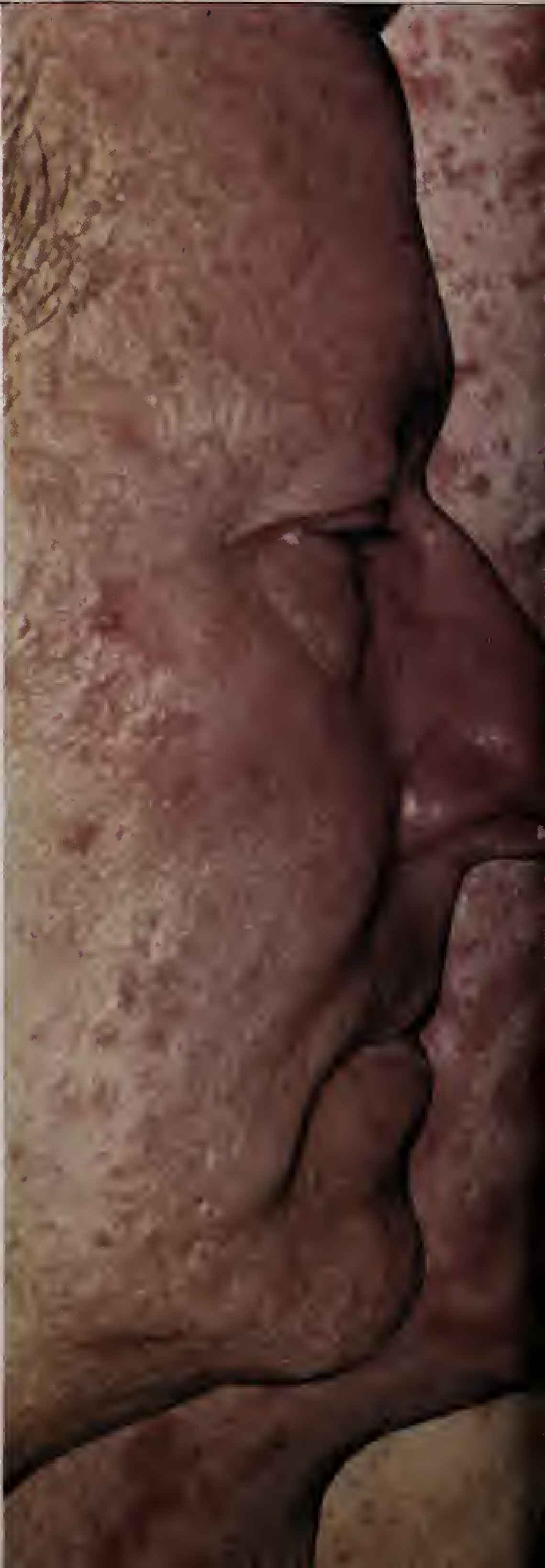
Efudex®(fluorouracil)—a new alternative to conventional therapy

Efudex presents the physician with a topical alternative to surgery in the treatment of solar or actinic keratoses. It is effective, comparatively inexpensive and especially well-suited for treatment of multiple lesions. Important, too, is the highly desirable cosmetic result. Clinical experience demonstrates that treatment with Efudex results in an extremely low incidence of scarring.*

Highly effective on first and later applications

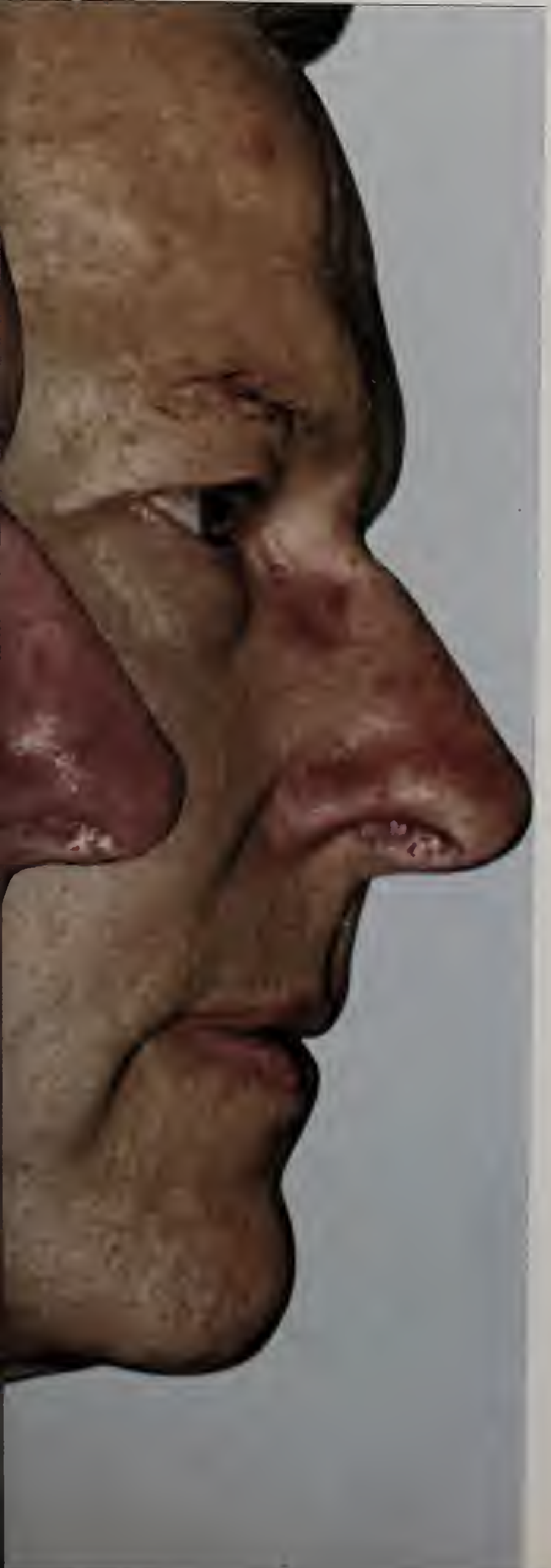
In clinical trials, depending on the dosage form and strength used, complete involution occurred in 77 to 88 per cent of lesions following treatment. The rate of recurrence was low, ranging from 1.7 to 5.6 per cent up to a year after completion of therapy. When lesions did recur or new ones appeared, repeated courses of Efudex therapy proved effective.*

1/22/68—Treatment with 5% 5-FU cream commences. Patient K.L. showing widespread but mild solar keratoses (also known as actinic keratoses).



2/2/68—After 11 days of treatment. Erythema is seen at site of keratoses. In addition, numerous lesions not apparent prior to therapy have become manifest by sharply defined reactions. Intervening skin, also treated, shows no response to therapy.

2/19/69—One year after cessation of therapy. Skin appears clear with no evidence of scarring. Examination reveals lack of recurrence or the formation of new lesions.



Predictable sequence of therapeutic response

Two to four weeks constitutes a typical course of Efudex therapy. The response is usually characteristic and predictable. After three or four days of treatment, erythema begins to appear in the area of the keratoses. This is followed by an intense inflammatory response, scaling and occasionally moderate tenderness or pain. The height of the inflammatory reaction generally occurs two weeks after the start of therapy, and then begins to subside as treatment is stopped. Within two weeks of discontinuing medication, the inflammation is usually gone. A mild erythema may remain for two to three months before gradually receding.

Selective—with a high degree of safety

Despite the temporary unsightliness and discomfort of the inflammatory episode, Efudex is, in general, more readily tolerated than surgery. Clinical work shows the intense inflammatory response to be limited to the area of the lesion. Normal skin is not similarly affected. Another measure of Efudex safety: systemic absorption of topical fluorouracil was insignificant, indicating a low risk of systemic toxicity.*

Two strengths—two convenient dosage forms

Efudex is available as a 2% or 5% solution or as a 5% cream. It is applied twice daily by the patient with a nonmetal applicator or suitable glove.

Before prescribing Efudex, however, there are two important considerations. First, please consult the complete prescribing information for precautions, warnings and adverse reactions. Second, advise the patient that treated lesions should respond with the characteristic but transient inflammation. A positive sign that Efudex is working for them.

*Data on file, Hoffmann-La Roche Inc., Nutley, New Jersey.

2% and 5% Solutions; 5% Cream Applied twice daily—resolves solar or actinic keratoses.

new
Efudex®
(fluorouracil)
cream/solution

For full prescribing information, please see the following page.

Roche introduces

Efudex®

(fluorouracil) cream/solution the new standardized topical for solar/actinic keratoses

Description: Efudex solutions and cream are topical preparations containing the fluorinated pyrimidine 5-fluorouracil, an antineoplastic antimetabolite.

Efudex Solution consists of 2% or 5% fluorouracil on a weight/weight basis, compounded with propylene glycol, tris-(hydroxymethyl) aminomethane, hydroxypropyl cellulose, parabens (methyl and propyl) and disodium edetate.

Efudex Cream contains 5% fluorouracil in a vanishing cream base consisting of white petrolatum, stearyl alcohol, propylene glycol, polysorbate 60 and parabens (methyl and propyl).

Actions: There is evidence that the metabolism of fluorouracil in the anabolic pathway blocks the methylation reaction of deoxyuridylic acid to thymidylic acid. In this fashion fluorouracil interferes with the synthesis of deoxyribonucleic acid (DNA) and to a lesser extent inhibits the formation of ribonucleic acid (RNA). Since DNA and RNA are essential for cell division and growth, the effect of fluorouracil may be to create a thymine deficiency which provokes unbalanced growth and death of the cell. The effects of DNA and RNA deprivation are most marked on those cells which grow more rapidly and which take up fluorouracil at a more rapid pace. The catabolic metabolism of fluorouracil results in degradative products (*e.g.*, CO_2, urea, α-fluoro-β-alanine) which are inactive.

Studies in man with topical application of ^{14}C-labeled Efudex demonstrated insignificant absorption as measured by ^{14}C content of plasma, urine and respiratory CO_2.

Indications: Efudex is recommended for the topical treatment of multiple actinic or solar keratoses.

Contraindications: Efudex is contraindicated in patients with known hypersensitivity to any of its components.

Warnings: If an occlusive dressing is used, there may be an increase in the incidence of inflammatory reactions in the adjacent normal skin.

Prolonged exposure to ultraviolet rays should be avoided while under treatment with Efudex because the intensity of the reaction may be increased.

Usage in Pregnancy: Safety for use in pregnancy has not been established.

Precautions: If Efudex is applied with the fingers, the hands should be washed immediately afterward. Efudex should be applied with care near the eyes, nose and mouth. To rule out the presence of a frank neoplasm, a biopsy should be made of those areas failing to respond to treatment or recurring after treatment.

Adverse Reactions: The most frequently encountered local reactions were pain, pruritus, hyperpigmentation and burning at the site of application. Other local reactions included dermatitis, scarring, soreness and tenderness.

Also reported were insomnia, stomatitis, suppuration, scaling, swelling, irritability, medicinal taste, photosensitivity and lacrimation.

Laboratory abnormalities reported were leukocytosis, thrombocytopenia, toxic granulation and eosinophilia.

Dosage and Administration: Efudex should be applied twice daily with a nonmetal applicator or suitable glove in an amount of the solution or cream sufficient to cover the lesion. When Efudex is applied to a lesion, a response occurs with the following sequence: erythema, usually followed by vesiculation, erosion, ulceration, necrosis and epithelization. The lower frequency and intensity of activity in adjacent normal skin indicate a selective cytotoxic property. Medication should be continued until the inflammatory reaction reaches the erosion, necrosis and ulceration stage, at which time use of the drug should be terminated. The usual duration of therapy is from 2 to 4 weeks. Complete healing of the lesion may not be evident for 1 to 2 months following cessation of Efudex therapy.

How Supplied: Efudex Solution, 10-ml drop dispensers—containing 2% or 5% fluorouracil on a weight/weight basis, compounded with propylene glycol, tris(hydroxymethyl)aminomethane, hydroxypropyl cellulose, parabens (methyl and propyl) and disodium edetate.

Efudex Cream, 25-Gm tubes—containing 5% fluorouracil in a vanishing cream base consisting of white petrolatum, stearyl alcohol, propylene glycol, polysorbate 60 and parabens (methyl and propyl).

Clinical Studies: The effectiveness of the three preparations as determined by complete involution of solar keratoses was: 2% Solution, 77% of 282 lesions; 5% Solution, 88% of 202 lesions; and 5% Cream, 85% of 189 lesions. In those lesions where complete involution followed treatment, the rate of possible recurrences observed clinically at periods up to 12 months or more was: 2% Solution, 4.6% of 218 lesions; 5% Solution, 1.7% of 177 lesions; and 5% Cream, 5.6% of 160 lesions. Because of the toxic potential of fluorouracil, some physicians preferred to use the 2% solution when large areas were to be treated. Approximately 30% of the lesions required treatment for two weeks or less; approximately 78% required four weeks or less for adequate treatment.

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LABORATORIES
Division of Hoffmann-La Roche Inc.
Nutley, New Jersey 07110

Editorials

May the Joy and Goodwill

Of the Season be with You

Throughout the coming Year

The Morris Cafritz Memorial Hospital

The Morris Cafritz Memorial Hospital is Washington's newest. Since its opening in April of 1966 it has been a pacesetter for many older institutions. The Medical Staff, under its first President, Frank S. Pellegrini M.D., and more recently under Francis P. Chairamonte M.D., has provided leadership in the development of this rather remarkable community institution.

The history of Cafritz is a story of people working together to provide a much needed service. With the exodus of several Capitol Hill and downtown hospitals in the early 1950s, community leaders foresaw a shortage of hospital beds in Southeast Washington and nearby Prince Georges County. In the years between 1953 and 1966 more than 15,000 families contributed time and money to the project.

The $12,000,000 needed to build and equip the 410 bed facility was raised through private contributions, through tax monies from Federal, D.C. and Prince Georges County governments, and from the proceeds of a long-term $4.5 million dollar loan. It is named in memory of Morris Cafritz, Washington builder and philanthropist, who served as Chairman of the Special Gifts Committee.

The community continues its involvement through membership in the non-profit Greater Southeast Community Hospital Foundation, Inc., owner and operator of the Hospital. Memberships are available to anyone who pays $10 per year and certifies an interest in the purposes of the Foundation. Members elect a 24-member Board of Trustees, 40 per cent of whom must be from the District of Columbia and 40 per cent from Prince Georges County. Physicians currently serving on the Board are Dr. Everlee Franks, Dr. Forest Harris, Dr. John Lynn, Dr. Lawrence Summerfield, Dr. Frank Talbot, and Dr. Emerson Williams.

More than 300 doctors have Staff Privileges, and 109 Active Staff members have dedicated themselves to the work of 30 or more Committees. There are 21 Departments, the Chairmen of these being:

Department of Anesthesiology	Dr. Kermit Hanson
Department of Dermatology	Dr. Charles Aaronson
Department of Emergency Medicine	Dr. Charles Colao
Department of General Practice	Dr. Thomas Cleary
Department of Internal Medicine	Dr. Frank Talbot
Department of Neurology	Dr. Charles Edwards
Department of Neurosurgery	Dr. Stacy Rollins
Department of Obstetrics/Gynecology	Dr. Edward Connor
Department of Ophthalmology	Dr. Michael Radulovic
Department of Oral Surgery	Dr. Allan Levey
Department of Orthopedic Surgery	Dr. John Lynn
Department of Otolaryngology	Dr. Sidney Jaffee
Department of Pathology	Dr. Masud Homayouni
Department of Pediatrics	Dr. Leroy Hoeck
Department of Physical Medicine	Dr. Glenn Reynolds
Department of Plastic Surgery	Dr. Bahman Teimourian
Department of Phychiatry	Dr. Anna C. Todd
Department of Radiology	Dr. Louis Wener
Department of Thoracic Surgery	Dr. William Lyons
Department of Urology	Dr. Francis Chiramonte

The result is a facility providing services far beyond those usually associated with a community hospital.

Situated on the southern boundary of the District near Wheeler Road, the 410 beds provide a full range of medical/surgical services. In addition there are 60 beds for OB/Gyn, 30 for Pediatrics, and a 20-bed short-term psychiatric unit. Intensive and Coronary Care Units offer a total of 16 beds. Intermediate and Extended Care services are provided, and both Pediatrics and Newborn nurseries offer Special Care Units.

A large Department of Rehabilitation Medicine provides both in- and outpatient service.

The Department of Radiology, specializing in diagnostic roentgenology and nuclear medicine, was the first in the Nation to install a computer hook-up to its radio-isotope scanners. The Department operates the Paul Himmelfarb School of Radiologic Technology.

The Department of Pathology has kept abreast of the latest computerized technology. The Department also operates the Morris Cafritz Memorial Hospital School of Medical Technology.

There are no interns or residents. Emergency Medicine is under contract to a team of highly qualified physicians. A House Staff of 23 provides coverage for all services.

The educational programs in the relatively new Hospital are developing rapidly. Clinical experience is provided for nursing students from Prince Georges Community and Marymount Colleges.

In 1970 admissions will total 19,400 and Emergency Room visits will reach the 50,000 mark. Visits to the small Outpatient Department, opened in 1970, will top 13,000. A total of almost 150,000 patient days and an occupancy rate of 91 per cent for the year mean that expansion must come soon.

Planning is under way, not only for additional beds but for increased outpatient facilities to meet growing community needs. A role study by a firm of hospital consultants projects that Cafritz will form the nucleus of a major medical center providing complete health care for Southeast Washington and large segments of Prince Georges County. The Cafritz Medical Staff is deeply involved in preparations for meeting these expanded goals.

The papers for this issue of the D. C. Annals were secured by the Public Relations and Medical Publications Committee at the Morris Cafritz Memorial Hospital consisting of Dr. Philip Cox, Chairman, Dr. Charles Colao, Dr. Masud Homayouni, Dr. Edward Cornwell, Dr. Louis Wener, Dr. Forest Harris, Dr. Francis Milone, Dr. Allen Levey, Dr. Raymond Parisi, Mrs. Dorothy Wheeler, Director of Public Relations, and Mrs. Dee Salomon, Medical Staff Secretary. Additional secretarial assistance was rendered by Mrs. Constance Hare and Janice Robertson.

HEALTH DEPARTMENT NOTES

Many Films Available Through Health Services Administration

FOR MANY YEARS motion picture films have played an important part in meetings of professional groups. The medical profession has used motion pictures to train interns, residents, nurses, and paramedical personnel.

The use of films as an educational tool is well established, but the availability of good subject matter and methods of getting the most out of visual aids has sometimes posed a problem. To help physicians with their programs in the medical field, the Health Services Administration's Health Education and Information Division maintains a library of more than 400 films on a variety of medical and health-oriented subjects. It is the largest film library of its kind in the area.

Films are listed in a free catalogue which gives a short description of the film, name of the producer, and running time. Each film is rated for audiences from pre-school through professionals. The catalogue is available by writing to the Visual Aids Section, Health Education and Information Division, Health Services Administration, 801 North Capitol Street, N. E., Washington, D. C. 20002, or call the film library at 629-3645.

The subject matter of films covers a wide variety from pre-natal care to problems of the aging. There are many films on heart disease, cancer, and up-to-date subjects like narcotics addiction, and environmental subjects like air and water pollution.

All films are 16 millimeter, and most are in color. The producers include a wide spectrum, from Hollywood companies to drug manufacturers, medical societies, and local, State and National health agencies.

The lengths of the films range from a 3-minute quickie on flouridation of drinking water for pre-school children to a film on juvenile delinquency, produced in London, which runs for over an hour. However, most of the films run between 10 and 28 minutes, which is about right for a meeting that is planned for about 1 hour.

In addition to the listing of films, the film catalogue gives many tips for getting the most out of this visual aid. The following suggestions may be helpful in planning your next meeting:

- Plan your program with the film as part of it.
- Select the film carefully, so as to supplement the lecture, course of study, or discussion.
- Preview the film before showing and prepare an outline of the points to be emphasized.
- Make a short introduction before showing the film. Tests have shown that when an introduction is presented, the audience learns more than half as much as when no explanation is given.
- Show the film under good conditions. Make sure that the audience will be comfortable, that the room is properly darkened, and that there is adequate ventilation.
- Have an experienced and qualified discussion leader discuss the film immediately after showing. Leave time for a discussion period.
- Whenever possible, use supplemental materials, such as related literature.

There are other things to watch for in planning a film program:

- Be sure to check out the projector in advance, and remember to bring along an extra extension cord and a spare bulb for the projector.
- Have the film ready for showing immediately after the introduction.
- Ship film back to the film library after showing, accompanied by a report card giving comments and the number attending the meeting.

Films used as an aid in education make the audience more willing to act, ask questions, participate in health programs, and work toward changes in the habits of living and community conditions. From a professional standpoint, films are valuable tools in providing the latest information on a number of important subjects.

If you need help in making your plans, the Health Services Administration's Health Education and Information Division is ready.

Raymond L. Standard, M.D., M.P.H.
Director, D. C. Health Services Administration

Know this number:

626-2222

When this number is called, Tuesday through Friday, 2 to 4 p.m., officers of the Narcotics Squad, Washington Metropolitan Police Department, will answer any questions about the illegal use of narcotics and will provide information regarding law enforcement and on civil commitment for users of narcotics.

An Invitation to Join . . .

The Royal Society of Medicine

There are 4500 overseas physicians and surgeons who belong to the Royal Society of Medicine; 1300 of whom reside in the United States. Membership is now being extended to members of the Medical Society of the District of Columbia.

In January all members will receive a letter from London which describes the two types of membership available. Literature on the various services and amenities provided to overseas members of the Royal Society will be included with the letter. These benefits would be especially helpful to those members who may be planning to visit the United Kingdom.

►DOCPAC BRIEFS

The Elections and their Significance to DOCPAC

The tumult and the shouting having died, some of the familiar faces will be missing as the 92nd Congress rolls up its collective sleeves and goes to work.

Perhaps 10 per cent of the people who served in the 91st are no longer with us politically because of death, retirement, or the toll inevitably taken by the electoral process. And so it seems timely and appropriate to assess the significance of the most recent biennial bloodletting—on the nation as a whole, and on DOCPAC in particular.

Certain general conclusions can be made:

★The two-party system is in a state of relative stability these days. Neither party can claim across-the-board victory, or even that its successes herald a clear-cut trend.

★Party discipline continues to slip as party loyalties continue to weaken.

★The voters have demonstrated beyond any doubt their refusal to be stampeded by emotional appeals unsupported by logical argument. Ticket-splitting was rife, and the tendency toward it will grow rather than diminish in elections to come.

In all of this, there is reason for Republican and Democratic PAC members to take some measure of comfort. It is now established beyond any argument that such volunteer organizations as those fielded by the PAC movement are essential to any candidate's success. It is just as plain that, in these days of soaring campaign budgets, realistic financial support by concerned citizens is essential to the political process.

On both of these scores, the PAC movement qualifies as a vitally important factor in national politics and in the government that evolves from politics.

Was DOCPAC successful? It could have been more so, of course, if we measure success from the standpoint of potential membership versus actual membership, potential financial participation versus actual financial participation.

But there are better yardsticks. In terms of the 92nd Congress, its members–on both sides of the aisle–respect the PAC movement (even though some of them have little cause to love it). And it is infinitely easier to debate with those who respect you.

As for our friends, their numbers grow, election by election. Theirs is not slavish support of medicine's positions, nor would we want it to be. Instead, it is a ready acceptance of medicine's bona fides and a willingness to work with our profession toward the attainment of common goals.

The key to these strengths is the identification by politicians of medicine's important and responsible role in the political process. DOCPAC's contribution to this identification has been substantial, and we can be proud of it.

We needn't belabor one obvious point: the overriding importance of the health legislation before the new Congress.

The significance of DOCPAC's contribution to the elections of 1970 is that we have helped earn medicine the right to argue its case before a friendlier, more attentive Congress.

That fact alone justifies DOCPAC's expenditure of time, effort and money in support of better government.

WILLIAM H. COOPER, M.D.
Chairman, District of Columbia
Political Action Committee

THE GIBSON COMPANY
61 years serving the medical profession

922 19th Street, N.W.
Federal 8-2688

Medical and Surgical Supplies
Hospital, Invalid and Sickroom Supplies
Surgical Fitting Specialists—Man and Woman
Private Fitting Rooms

NATIONAL & REGIONAL MEETINGS

December 3–4: Conference on Clinical Pharmacology. Washington. Address: Mr. Duke C. Trexler, Executive Secretary, National Research Council, Division of Medical Sciences, 2101 Constitution Avenue, Washington, D.C. 20418.

December 5–10: American Academy of Dermatology. Chicago. Address: Dr. Frederick A. J. Kinergy, Secretary-Treasurer, 2250 Northwest Flanders, Portland, Ore. 97210.

December 7–9: Southern Surgical Association. Boca Raton. Address: Dr. David Sabiston, Jr., Executive Secretary, Duke University Medical Center, Durham, N.C. 27706.

December 11–15: National Federation of Catholic Physicians. Washington. Address: Mr. Robert H. Herzog, Executive Secretary, 2825 N. Mayfield Road, Milwaukee 53222.

December 14–18: PAHO/WHO International Conference on the Application of Vaccines Against Viral, Rickettsial, and Bacterial Diseases of Man. PAHO Headquarters, Washington. Address: Dr. M. Martins da Silva, Conference Secretary, Department of Research Development and Coordination, 525 Twenty-Third Street, N.W., Washington, D.C. 20037.

December 17–20: American Psychoanalytic Association. New York. Address: Mrs. Helen Fischer, Executive Secretary, 1 E. 57th Street, New York 10022.

January 2–21: American College of Surgeons, Scientific Winter Cruise, Combined with Sectional Meetings. Panama City, Caracas, and San Juan. Address: American College of Surgeons, 55 E. Erie Street, Chicago 60611.

January 6–9: American Rheumatism Association. Washington-Hilton Hotel, Washington. Address: Miss Margaret M. Walsh, Executive Secretary, 1212 Avenue of the Americas, New York, 10036.

January 18–20: Society of Thoracic Surgeons. Dallas. Address: Mr. Walter G. Purcell, Business Manager, 333 N. Michigan Avenue, Chicago 60610.

February 3–7: American College of Cardiology. Sheraton Park Hotel, Washington. Address: Mr. William D. Nelligan, Executive Director, 9650 Rockville Pike, Bethesda, Md. 20014.

February 14–15: AMA Congress on Medical Education, 67th Annual. Chicago. Address: Dr. C. H. William Ruhe, AMA Council on Medical Education, 535 N. Dearborn Street, Chicago 60610.

News & Personals

SUMMARY OF EXECUTIVE BOARD ACTIONS

Proceedings of the October 26 Meeting

Dinner was served for Board members in the Exhibit Hall of the Medical Society. Present were Drs. Robert J. Coffey, Chairman, Henry D. Ecker, William S. McCune, Frank S. Pellegrini, Marvin C. Korengold, Howard Katzman, James E. Boland, John J. Hughes, C. Willard Camalier, Jr., and Mr. Thomas Sadler, Secretary. Mr. Francisco P. Ferraraccio was present by invitation.

Dr. Coffey welcomed Mr. Ferraraccio, new Executive Director to succeed Mr. Thomas Sadler, and stated that the Board was looking forward to his joining the Society officially on January 1, 1971.

The executive session of the Board was called to order at 7:10 p.m. by the Chairman, Dr. Robert J. Coffey.

The minutes of the September 28 meeting were approved as submitted.

Committee Meetings: The Secretary reported the following committees had met since the last meeting of the Board:

October 1	Breast Cancer Study
7	Constitution and Bylaws
	Ruffin & Other Bequest Funds
8	Communicable Disease
	Medical Ethics & Professional Conduct
9	Insurance
13	Board of Credentials
14	Finance
	Fee Review
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	DCCMS
13	Nominating Committee
15	Special Committee on Medical Bureau
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	Subcommittee on Legal Counsel

Board of Credentials: On recommendation of the Board of Credentials, 13 members were elected to Active membership and 4 members were elected to Associate membership. Their names appear on page 712. Approval was given to the following changes in membership status:

Transfers

Active to Associate: John Schreiber, Hubert Alpert, and Raymond McGill.

Resident-Intern to Associate: Joseph Snyder.

Active to Special: Philip Caulifeld

Reinstatement

Active: Larry Silver and John Kehoe

Resignations

Associate: Vernon Caughlan

Health Foundation: On the recommendation of Dr. Korengold, Chairman of the Health Foundation Board of Directors, a motion was made and carried that the existing Board of Directors of the Health Foundation be renominated for membership approval at the 1970 Annual Business Meeting.

Kober Lecturer: Drs. William S. McCune, William P. Herbst, Jr., Chairman, and Wallace M. Yater, members of the Kober Lecture Subcommittee, unanimously recommended to the Executive Board that Dr. Robert J. Coffey be nominated as Lecturer for 1971. A motion was made and carried to accept the recommendation of the Subcommittee that Dr. Robert J. Coffey be nominated as Kober Lecturer for 1971.

Boards of Trustees: A motion was made and carried to accept the proposed amendment to the Bylaws to allow for the election of Group Hospitalization's and Medical Service of D. C.'s Boards of Trustees in the same manner as Society officers; the proposed amendment to be presented to the membership at the 1970 Annual Business Meeting.

Finance Committee: On recommendations submitted by the Finance Committee, the following motions were made and carried: (1) that effective January 1, 1971 all tenants of the Medical Society building be charged $5.50 per square foot for space occupied, and that all leases be for a period of 3 years; (2) to approve the relocation of the Regional Medical Program office from its present 4th floor quarters in the Society building to the space formerly occupied by the American Cancer Society, with the parking spaces allotted to RMP remaining at the present authorized number of 4; (3) to approve the proposed budget for 1971; and (4) that there be no change in the arrangements made for the Multiple Sclerosis Society's use of the Exhibit Hall.

Other Business

1. A motion was made and carried to accept the opinion and recommendation of the Medical Ethics and Conduct Committee that it is unethical for a physician to receive rebate in any form from any source; that such is in violation of Section 7 of the Principles of Medical Ethics; and that a memorandum to this effect be circulated to Society membership, and to all commercial, clinical and pathological laboratories in the area.

2. A motion was made and carried to accept the report on Regional Medical Program activities as submitted by Dr. Arthur Wentz.

3. For the Board's information, it was noted that Marino J. Maturo and Luigi P. Vecchiarello, both of whom had been charged with practicing medicine with forged Mexican medical credentials, were sentenced to 10 years imprisonment.

4. The Relative Value Study Committee made recommendations for several changes in the Relative Value Scale for Anesthesiology. A motion was made and carried to accept the changes as follows:

0238 excision pilonidal cyst	3 units + time	4 units + time
0115 drainage pilonidal cyst	3 units + time	4 units + time
2927 excision parotid	4 units + time	5 units + time
2988 excision branchial cyst	4 units + time	5 units + time
3375 hemorrhoidectomy	3 units + time	4 units + time
5995 tympanoplasty	4 units + time	5 units + time

There being no further business the meeting was adjourned at 9 p.m.

►NEW MEMBERS

Active

STEWART ALEDORT, M.D. Office: 2141 K Street, N.W. Born in New York City. Medical degree: Albert Einstein College of Medicine, 1964. Specialty: Psychiatry.

ARTHUR BECKER, M.D. Office: 730 24th Street, N.W. Born in Brooklyn, New York. Medical degree: State University of Iowa, 1961. Specialty: Obstetrics-Gynecology.

LEONARD BISACCIA, M.D. Office: Forrestal Building, Room 6B060. Born in New Britain, Connecticut. Medical degree: University of Vermont, 1943. Specialty: Radiology.

TSUNG CHENG, M.D. Office: D.C. General Hospital. Born in Shanghai, China. Medical degree: St. John's University, Shanghai, 1950. Specialty: Internal Medicine.

IRA CHIDEL, M.D. Office: 1310 Southern Avenue, S.E. Born in Washington, D.C. Medical degree: Georgetown University, 1963. Specialty: Radiology.

GISELA DENGEL, M.D. Office: 850 Delaware Avenue, S.W. Born in Muensterberg, Germany. Medical degree: University of Munich, 1960. Specialty: Pediatrics.

DESSOUKY DESSOUKY, M.D. Office: 3800 Reservoir Road, N.W. Born in the United Arab Republic. Medical degree: Ain-Shams University, Cairo, 1956. Specialty: Obstetrics-Gynecology.

STEPHEN KENT, M.D. Office: 901 23rd Street, N.W. Born in Mulhouse, France. Medical degree: Case Western Reserve, 1960. Specialty: Pathology.

L. DAVID LEVI, M.D. Office: 2141 K Street, N.W. Born in Buffalo, New York. Medical degree: Cornell University, 1964. Specialty: Psychiatry.

PAUL LUBAR, M.D. Office: 1310 Southern Avenue, S.E. Born in Chicago, Illinois. Medical degree: University of Illinois, 1965. Specialty: Radiology.

LARRY SIEGEL, M.D. Office: D.C. General Hospital. Born in Winter Haven, Florida. Medical degree: University of Miami, 1960. Specialty: Internal Medicine.

Associate

DAVID FAIRBANKS, M.D. Office: National Institute of Health. Born in Ann Arbor, Michigan. Medical degree: University of Utah, 1963. Specialty; Otolaryngology.

ROBERT NEIDLINGER, M.D. Office: 6120 Brandon Avenue, Springfield. Born in San Francisco, California. Medical degree: Stanford University, 1952. Specialty: Ophthalmology.

TERENCE MCGUIRE, M. D. Office: 311 Addison Road, S., Seat Pleasant. Born in Washington, D. C. Medical degree: University of Maryland, 1968. Specialty: General Practice.

ROBERT HELMLY, M.D. Office: Hahn Professional Building, Severna Park. Born in Savannah, Georgia. Medical degree: St. Louis University, 1959. Specialty: Allergy.

Christmas Greetings

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for the
Christmas Season
and the New Year

—The Editorial Staff

PERSONALS

Dr. Frank J. Sanzaro has been elected President of the Providence Hospital Medical Staff for 2 years effective January 1, 1971. He will succeed Dr. John A. Long. Born in New Britain, Connecticut, Dr. Sanzaro received his bachelor of science degree from Fordham University and his medical degree from Georgetown University. He completed his internship at D. C. General Hospital, his fellowship in pathology at Georgetown Medical School, and his surgical residency at the old Providence Hospital. He was an instructor in the Department of Surgery at Georgetown from 1947 to 1957. Currently Dr. Sanzaro is a Senior Attending Surgeon Training Officer, a post he has held for many years; and Chairman of the Credentials Committee. He is also vice-president of the Section on General Surgery at the Medical Society of the District of Columbia, and is a fellow of the American College of Surgeons.

GENERAL NEWS

Dr. William B. Walsh, founder and President of Project HOPE, was presented the **Simon Le Moyne Medal** at the 1970 Le Moyne College Founder's Day Dinner in Syracuse on November 11th. The presentation was made by William J. Reilly, S.J., President of the College. The Award memorializes the first Jesuit missionary to Central New York. The hospital ship S.S. HOPE will leave for a 10 month training mission to Kingston, Jamaica on January 8th. Missions are scheduled for northeastern Brazil in 1972 and to Venezuela in 1973. Recently, HOPE began health career training programs in the Mexican-American community of Laredo, Texas, and on the 16 million acre Navajo Indian reservation at Ganado, Arizona.

The new **President's Council on Physical Fitness and Sports** appointed by President Nixon includes an astronaut, a university president, 3 physicians, a former Miss America, a TV producer, a corporation vice president, a basketball star, 3 physical educators, a former New York Yankee, a school administrator, and a Boys' Club official. In announcing this lineup, the President abolished a Council made up of cabinet officers and other high ranking Federal officials. The action was taken to increase the professional competence and the public involvement of the policy-making body for the nation's physical fitness program. In addition to reorganizing the Council and its staff, the President has appointed the first 50 members of an Advisory Conference on Physical Fitness and Sports. It is made up of famous athletes and sports figures. They will be available to the Council to serve as speakers, and on special panels and study groups.

The Honorable John G. Veneman, Under Secretary of Health, Education and Welfare, was one of the principal speakers at the Dedication Ceremonies for the new 7.7 million dollar, nine story **Metropolitan Hospital for Extended Care** on November 19. President-elect of the American Medical Association, Dr. Wesley W. Hall, also made an address. Other distinguished guests included: His Eminence Patrick Cardinal O'Boyle, Archbishop of Washington, D. C., and the Honorable Walter E. Washington, Mayor-Commissioner of the District of Columbia.

The **Drug Abuse Control Bill** has been signed by President Nixon. This bill focuses on controlling the flow of narcotics and dangerous drugs and on apprehending narcotics peddlers. All drug manufacturers and distributors must be licensed under the act, and methods of record-keeping and reporting have been strengthened. Three-hundred additional Federal narcotics agents are provided by the new law; and also the use of the controversial "no-knock" power, enabling police to enter homes without knocking.

The Honorable James L. Harrison, recently retired 14th Public Printer of the United States, received the **Edward F. Bartelt Award** for devoted volunteer participation in the cause of cancer control at the semi-annual meeting of the Board of Trustees of the **American Cancer Society**, D. C. Division, on November 19th at the Washington Hilton Hotel. Mr. Harrison was the first Federal employee to become President of the Society's D. C. Division in 1968 and was re-elected in 1969. Established in 1962 in memory of Mr. Bartelt, former Assistant Fiscal Secretary of the Treasury, the award is made annually for distinguished service by a Federal employee in Washington.

Dr. James H. Masterson of Alexandria, Virginia has been elected president of the 6,000 member **National Federation of Catholic Physicians' Guilds.** He succeeds Dr. Gino G. Papola of Upper Darby, Pennsylvania.

A **Bibliography of Sports Medicine** has been published by the American Academy of Orthopedic Surgeons. The 96-page volume contains 175 index subjects that includes aquatics, biomechanics, conditioning, drugs, equipment, the knee, pain, research methods, skin-diving, warm-up, and weight. It is available at $2.00 per copy with quantity discounts. Write Publications Committee, American Academy of Orthopedic Surgeons, 430 N. Michigan Avenue., Chicago, Ill. 60611.

The **American Medical Association** is offering desk top signs and wall plaques; the former asks *No Smoking Please* and the latter announces *For The Sake Of Your Health And The Comfort Of Others—No Smoking Please.* Signs are 95¢ each for 5 or more, and $1.25 for up to 4 signs; the plaques are $1.50 each up to 4, and $1.20 for larger quantities. Write the AMA, 525 North Dearborn Street, Chicago, Ill. 60610.

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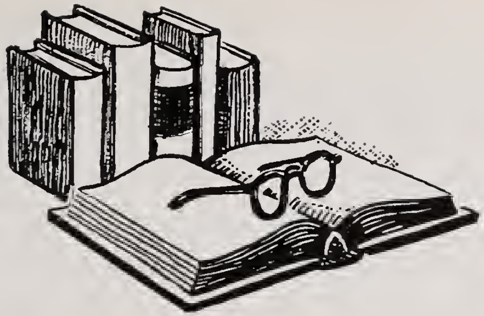

Book Reviews

Handbook of Legal Medicine, 3rd Edition. ALAN R. MORITZ and R. CRAWFORD MORRIS. Price, $8.75 Pp 238, with 16 Sketches, 3 Tables and 10 Figures. St. Louis, Mosby, 1970

This handbook dedicates its first half to scientific medico-legal investigation. Police departments, particularly homicide units, and physicians who are coroners, medical examiners or those who work with the police or medical examiners will find this part of the handbook useful. In simple, relatively non-technical language, the physician is led through the rationale he must follow when called upon for help in cases of violent or unexplained deaths. Pointers are given in identifying the dead and determining the time of death.

A very brief discussion of trauma, its etiology, its pathology, and its relation to disease will give a layman some understanding of the problems. Various types of trauma, such as missiles, asphyxia, battered kids, burns, and others are considered, and methods of drawing information from these injuries are discussed.

Pharmacology of 25 common poisons is presented, the involved physicians' duties detailed, and how to search for poisons is briefly described.

Identification of various body fluids and the medico-legal aspects of these studies are mentioned.

The second half of this little volume is devoted to the physician and the law. Thirty-eight different subjects that relate to medicine, directly or indirectly, and that are sources of legal interest too, are considered in alphabetical order and range from abortion to wrongful death actions. There is a little something for every specialty from the ancient one of obstetrics to the ultra-modern organ transplantation. Administrative matters such as fees, medical societies, workmen's compensation, insurance, records, consents and licenses come in for their share of the book as do a few purely legal matters such as statutes of limitation, proximate cause, and special defenses.

References are adequate and the glossary, more of legal than medical terms, is an aid to the physician who is unfamiliar with the legal vocabulary or the attorney who doesn't speak medicalese.

This little book gives the physician a brief exposition of the parts of law most usually related to medicine. It is a good book for the shelf of a physician who hasn't much time to read law.

DON S. WENGER, M.D., J.D.

Ocular Examination: Basis and Technique. ARTHUR H. KEENEY, M.D. Price, $15.25. Pp. 272, with 161 illustrations. St. Louis: Mosby, 1970.

Unlike most organs, the eye is ready and available for direct inspection; accurate diagnosis often depends on minute observation and the mastery of a wide range of examining techniques.

This new volume by the chief ophthalmologist of the Wills Eye Hospital and 7 contributors will be of primary benefit to ophthalmology residents, who stand to gain the most from having a seasoned clinician discuss the subtleties of basic examining techniques. However, the book is also the most comprehensive and up-to-date text available on the many newly available instruments for such standard examinations as perimetry as well as such ultra-modern techniques as ultrasonography. An even-handed approach describes the limitations as well as the special assests of various techniques, and is a good introduction to them. Nothing, of course, can substitute for observing demonstrations of new equipment and the actual practice of the technique. Only then can one really appreciate its particular utility in clinical practice.

RONALD S. FISHMAN, M.D.

OBITUARIES

Saul Schwartzbach
(1902–1970)

Dr. Saul Schwartzbach died November 1, 1970 in Rochester, Minnesota. He lived at 5426 27th Street, N.W., Washington, D.C.

Dr. Schwartzbach was born in New York City on December 20, 1902. He received his B.A. in 1924 from Cornell University and his medical degree in 1929 from the University of Maryland. He served his internship at Sinai Hospital and old Emergency Hospital in the District of Columbia; also serving a residency at Emergency Hosptial from 1931 to 1933.

Dr. Schwartzbach was Chief of Surgery at Prince George's General Hospital and a Consultant to the Washington Hospital Center. He was a past-president of the Washington Academy of Surgeons and a fellow of the American College of Surgeons. He held membership in the Jacobi Medical Society, the American Medical Association, the Prince George's County Medical Society, the Medical and Chirurgical Faculty of the State of Maryland, and the International College of Surgeons. He was elected to Active membership in the Medical Society of the District of Columbia in January, 1934.

He was a Navy veteran, having served as a lieutenant commander during World War II.

A Dr. Saul Schwartzbach Memorial has been established at Prince George's General Hospital, Cheverly, Md.

Dr. Schwartzbach leaves his wife, Edith Sugar Schwartzbach; a son, Saul M. Schwartzbach, Adelphi, Md.; and 2 daughters, Mrs. Neil Sherman, Adelphi, and Mrs. Bruce Kipniss, Greenbelt; and 3 sisters, Mrs. Etta Sternlieb, and Miss Rosalind Schwartzbach, both of Wilkes Barre, Pa.; and Miss Eleanor Schwartzbach of Washington.

Francis N. Strawbridge
(1904–1970)

Dr. Francis N. Strawbridge died September 18, 1970. He lived at 5101 River Road, N.W., Washington, D.C. He had practiced in Washington since 1935.

Dr. Strawbridge was born in Baltimore, Maryland on May 5, 1904. He received his undergraduate degree and medical degree from the George Washington University. From 1932-1933 Dr. Strawbridge interned at Sibley Hospital and was in residency there from 1933 to 1934. He did postgraduate work in 1937 at the Chicago Lying-in Hospital in Obstetrics.

Dr. Strawbridge was elected to Active membership in the Medical Society of the District of Columbia in November, 1936.

He leaves his wife, Elizabeth Fisher Strawbridge of the home address.

Anna Bartsch-Dunne
(1876–1970)

Dr. Anna Bartsch-Dunne, a retired professor of Howard University Medical College, died October 13 at the Ruppert Nursing Home in Washington. She lived at 2300 Good Hope Road, S.E., Washington, D.C.

Dr. Bartsch-Dunne was born in Germany on December 18, 1876. She came to the United States as a child and lived with her parents in Burlington, Iowa. She attended George Washington University; and received her medical degree from Howard University Medical College in 1902. She fulfilled her internship at the Philadelphia Lying-in Hospital. Dr. Bartsch-Dunne did postgraduate work in gynecology in Vienna, in 1925; in Paris for gynecology in 1926; and in London for proctology in 1927. She served from 1916 to 1932 on the Howard University Medical College Faculty and also maintained a private practice in Washington.

Dr. Bartsch-Dunne was President of the Woman's Medical Society of the District of Columbia from 1936 to 1938. She was a member of the A.M.A.; the American Medical Women's Association; the Medical Women's International Association as well as the Medical Society of the District of Columbia. She was elected to Life membership in the Medical Society of the District of Columbia in 1945. She was also a member of the Arts Club, Women's City Club and the Twentieth Century Club.

Dr. Bartsch-Dunne established scholarships at the State University of Iowa in memory of her parents, known as the Henry and Anna Bartsch Endowment, for an annual Medical Scholarship for a woman; and an annual Medical Internship for a woman, available to residents of Iowa. These scholarships are similar to the Anna Bartsch Endowment established several years ago in memory of her mother at the George Washington University. An Anna Bartsch-Dunne Medical Scholarship for women was established at Howard University in 1955.

In March, 1961 Dr. Bartsch-Dunne received an Alumni Achievement Award from Howard University on the 94th anniversary of its founding.

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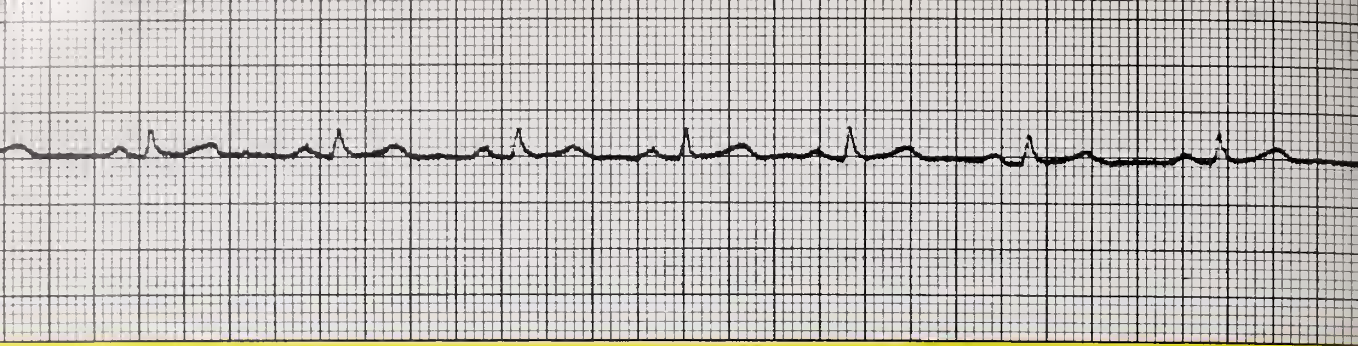

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